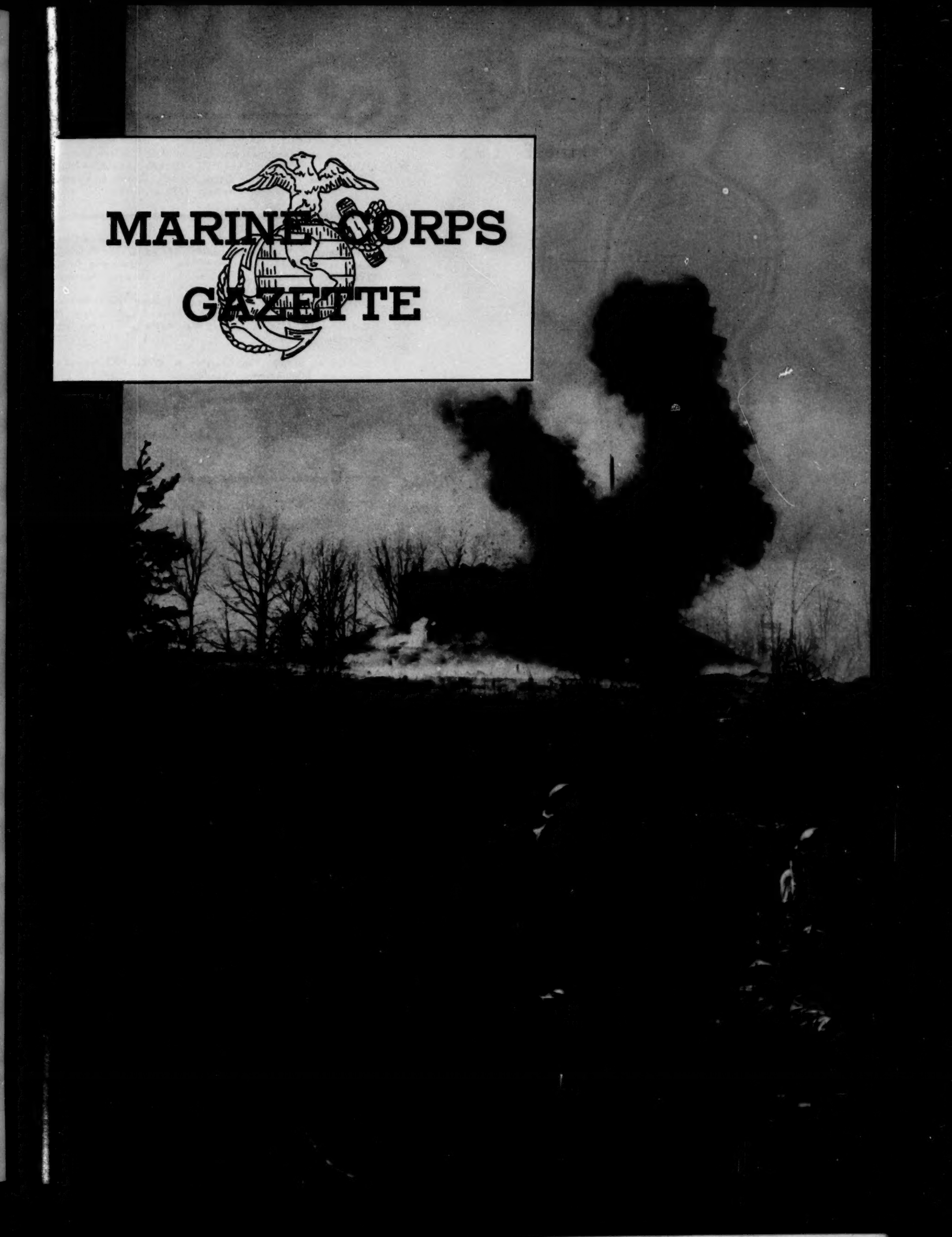
# MARINE CORPS GAZETTE



# Marine Corps Gazette

## JUNE 1950

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***Opinions expressed in the Marine Corps GAZETTE do not necessarily reflect the attitude of the Navy Department nor of Headquarters, U. S. Marine Corps.***

**THIS MONTH'S COVER:** An "enemy" pillbox gets a direct hit from a Marine grenadier during the demonstration by Schools Troops recently before persons attending the 6th Joint Civilian Orientation Conference at Marine Corps Schools, Quantico. The grenade hurling shown is part of *attack on a fortified position* problem.

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**THIS MONTH AND NEXT**—In keeping with its policy of trying to keep its readers abreast of new developments the GAZETTE leads off this month with *Employment of the Small Helicopter* by Capt Robert A. Strieby. Many uses of the small 'copter by ground forces are described by Capt Strieby, former project officer for HMX-1.

In July the GAZETTE looks to the future with Commodore Dudley W. Knox, USN (Ret'd). Commodore Knox, well-known naval writer and early associate of the late Gen Billy Mitchell, presents his ideas of future missions for the Navy and Marine Corps in *Naval Campaigns of the Future.*

Also scheduled for July is *First Line of Offense* by M. H. Williams, author of the well-received *Strategy and Our National Objectives* (Nov. '49 GAZETTE), and *Decisive Amphibious Battles—III: Hastings* by Maj Niels M. Dahl.


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The Bell System is one of the great businesses of this country and a part of the prosperity of the whole country.

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In this day of specialists, we'd like to tell you about a 6-in-1 man. He's a technical adviser, engineer, liaison officer, mechanic, educator, expeditor, in one neat package labeled "Chance Vought Field Service Representative".

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As a combined technical adviser-engineer-mechanic, the field service man is the on-the-spot source of timely facts and figures when a "quick-fix" is required, as well as during major maintenance and overhaul jobs. As liaison officer, he is the direct link for interchange of information between the operating squadrons and Chance Vought Aircraft. As educator, he conducts classes to keep ground crews abreast of maintenance and repair procedures. As expeditor, he keeps to a minimum the time between a demand for spare parts and their installation.

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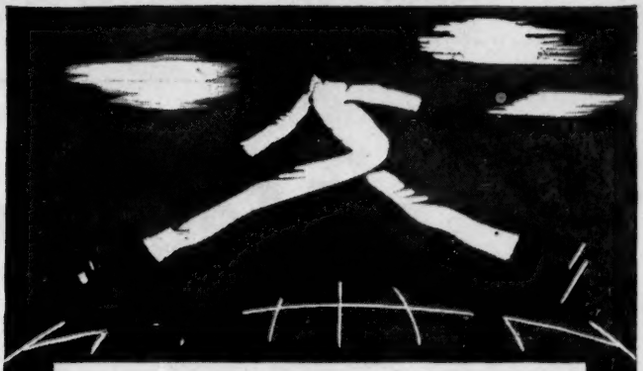
Periodically, Vought's 6-in-1 experts return to Dallas for refresher courses, adding important chapters to their book of knowledge. For some time they have been making exhaustive studies of Pirate and Cutlass jet fighters, learning what makes them tick, preparing themselves to meet the problems that can arise when the planes go into actual service.

The work of our 6-in-1 men really pays off. It helps the Navy and Marine Corps keep Vought airplanes always ready to fly — and at top operating efficiency.



Vought field men are great travelers. Using planes, cars, trains and ships, last year they covered 420,860 miles on land and water, in cold climates and hot, in the performance of their job. More than 65,000 miles of this travel was aboard Navy aircraft carriers.

Vought service men are frequently aboard carriers during maneuvers. They're always ready for the loudspeaker call: "Now hear this — Vought Service Man, report to hangar deck!" It's a summons for their special kind of help as problems arise during the job of getting planes in A-1 shape for flight.

The Field Service Department here in Dallas keeps field men informed of engineering changes and expedites shipment of spare parts. Service manuals are compiled for distribution to military squadrons. Courses are conducted in maintenance and operation of new Vought fighters for our own field men and for Navy and Marine Corps personnel.

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# Message Center

### Nonpareil Exemplars . . .

DEAR SIR:

It is a phenomenon indeed that since publication of the new Marine Corps Manual, none of your quick-to-pen contributors have felt the urge to either assail or praise that monumental work. Let me be the first then to commend its anonymous authors on a job well done. Not only is it complete and authoritative, but it is even possible to read extensive parts of it without being put to sleep. And to fill our cup of joy to overflowing, it has an index that is truly a guide to the contents.

In view of the Manual's general excellence it is with regret that I must register protest against a most depressing flaw. I speak of the repeated and unpardonable sin of its use of the term "enlisted persons(s)" when it is speaking of U. S. Marines—those nonpareil exemplars of all the soldierly virtues.

How great must be the anguish of all the famed and storied figures of our Corps' past in Valhalla or well-earned retirement to know that they were only "enlisted persons"! I doubt that the authors of that ignominious phrase would dare call an old-time or new-time Gunnery Sergeant "enlisted person" to his face.

From the Commandant to the newest boot we are all Marines, and the Nation thinks of us as such. By custom and usage within the Corps the term "Marine" has come to mean the enlisted Marine, while "Marine Officer" means the commissioned Marine. So why don't we use those meaningful names in all of our official orders and correspondence instead of such milquetoast appellations as "enlisted person" or "enlisted personnel"?

All in all, haven't we an incomparable hymn in which we proudly say "We are proud to claim the title of United States Marines?"

F. P. HENDERSON,
LtCol, USMC

ED: LtCol R. D. Heinl penned a review of the Manual in the October 1949 GAZETTE. See page 60 of that issue.

### Royal Welch Fusiliers . . .

DEAR SIR:

As to the question of the Royal Welch Fusiliers: I was well aware of this distinguished regiment's preference for this particular spelling, but deliberately eschewed a form of orthography which might well have seemed pedantic to readers unacquainted with the intense regional patriotism by which the Welsh (Welch!) have become increasingly characterized. That the alternative I employed would appear to have been generally accepted in the near-past, as well as in even remoter days, would appear to be borne out by the fact that Fortescue, whose monumental *History of the British Army* was written between 1900 and 1930 utilizes Welch throughout; as so Chicester and Burges Short in their standard work, *Records and Badges of the British Army*. Furthermore, my copy of the *Journal of Occurrences During the Late American War*, dated 1809, is by *R. Lamb, Late Serjeant in the Royal Welsh Fusileers*. So if I have sinned it would appear that I have done so in remarkably good company. This does not absolve me, however, from the obligation to apologize for any outrage done to the susceptibilities of Welchmen and their supporters which my orthographic choice may have occasioned.

REGINALD HARGREAVES,
Maj, (Retired)

### TTU—LANT . . .

DEAR SIR:

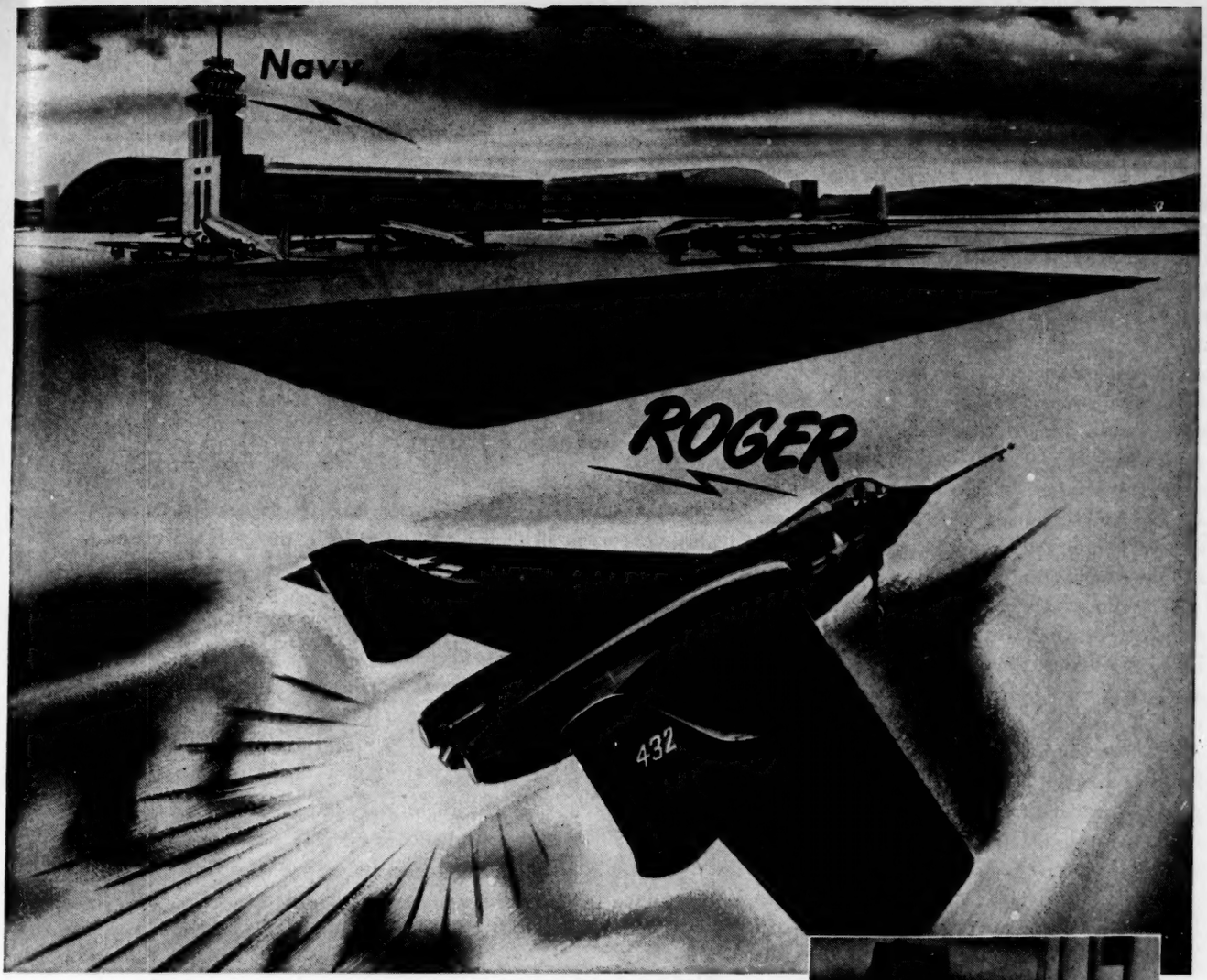
Realizing that there is probably no place in the GAZETTE for profanity, I will attempt to keep this letter on a restrained level. But!!!, reference to "the Marine Detachment Troop Training Unit, Atlantic." (sic)!!! (Editors note, April 1950 GAZETTE).

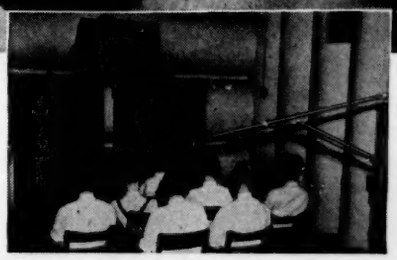
At one time I too shared the lack of knowledge which the above reference indicates. Upon being ordered to Troop Training Unit, Pacific, I not only knew nothing of the organization but could find no one at the duty station from which I left who could tell me anything about it. However, during my two years' duty there I became an apostle of the Troop Training Units.

The Troop Training Units are commissioned activities under the command of general officers, and I consider that it is correct to state that during the post war period no organizations within the Marine Corps have contributed more to the Marine Corps' amphibious position. Perhaps the following item which I had the privilege of preparing for presentation to the Secretary of Defense, and in a calmer moment I might add, will give some indication of the scope of Troop Training Unit activity.

#### Troop Training Units

"The Troop Training Units are subordinate elements of the Pacific and Atlantic Amphibious Training Commands. Primarily constituted of Marine Corps personnel, with augmentation by Navy and Army personnel, the Troop Training Units



# The story behind "ROGER"

The noise in the cockpit of a jet fighter plane preparing to take off is *deafening*. It compares with a battery of air hammers on a steel hull, or the roar of water at the base of Niagara Falls.

Yet, through this tremendous noise, the pilot must hear and understand his take-off instructions before he can "roger." To accomplish this, new and better electronic equipment, both to transmit and to receive messages, was required.

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**Persons selected at random, with normal hearing and vocal characteristics, were seated in the soundproof room, illustrated above, and fitted with experimental phones and microphones. Electronically generated noise, which synthesized a jet engine sound exactly, was amplified to a deafening roar—to the threshold of pain—and reproduced on the loudspeakers at the front of the room. Then over the earphones came words, words, words, and the test subjects wrote them down as they understood them.**

**Patiently, over a period of months, by constantly analyzing and changing, by improving microphones and earphones, and by developing special amplifiers, and by fitting them all together in a complementary manner, there finally evolved a complete system—microphones, earphones, and special amplifiers—through which the pilot could understand and be understood—over the roar of his jet engine.**

These same methods have developed acoustical systems for other high noise-level applications—the diesel-engine room of a submarine, the bridge of a battleship during main-battery firing, or AA gun positions at the height of an anti-aircraft attack.

Consideration of problems such as were presented in these high-articulation earphones and microphones is the daily concern of RCA engineers. To all such problems are brought the same experience, persistence, and ingenuity which have made RCA the leader in the fields of radio and electronics.

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present courses of instruction in the areas in which they are based, and are also organized so that they can move to the home station of units to which instruction is to be given so that it will not be necessary to transport large bodies of troops over long distances in order for the troops to receive amphibious training.

"The training conducted by the Troop Training Units includes instruction of new and inexperienced personnel, and refresher courses for seasoned troops. This shore amphibious training consists of progressive courses in such subjects as amphibious indoctrination, intelligence, supply, waterproofing, communications, and administrative procedures. Training also includes such detailed subjects as naval terminology, loading and stowage of men and equipment aboard ship, life aboard a transport, use of cargo nets for debarking personnel from ships to landing craft, ship to shore communications, the use of naval gunfire and air support, movement from ship to shore, and the establishment of a beachhead on enemy shores.

"The Troop Training Unit, Amphibious Training Command, Pacific Fleet, was activated in 1943 at Camp Elliot, San Diego, California. Since its inception, over 100,000 officers and men of the Army, Navy, and Marine Corps have received training conducted by this unit. The Troop Training Unit, Amphibious Training Command, Atlantic Fleet, was established in March, 1946, and has subsequently conducted amphibious training programs ranging from one day courses for classes as small as three students to full scale training for an armored division.

"An example of the flexibility of these units is found in instances of concurrent training. During 1946 a training team from the Troop Training Unit, Amphibious Training Command, Pacific Fleet, proceeded to Fort Lewis, Washington, and conducted amphibious training for the Second Infantry Division, U. S. Army, while at the same time another training team was provided to present amphibious instruction to U. S. Army regimental combat teams in Japan. In 1947, the Troop Training Unit, Amphibious Training Command, Atlantic Fleet, conducted similar concurrent courses of amphibious instruction at Camp Hood, Texas, for the 2d Armored Division, U. S. Army, and for a regimental combat team of the 2d Marine Division at Little Creek, Virginia.

"To a large degree, the success of the amphibious demonstrations staged in the San Diego area for the students of the Command and General Staff School, Ft Leavenworth, Kansas, and the East Coast summer training and demonstrations conducted for the cadets from West Point and the midshipmen from Annapolis, can be attributed to the amphibious know-how and the instructional ability of the officers and men of the Troop Training Units.

"In spite of the present critical personnel situation, the Commandant of the Marine Corps has endeavored to maintain these units at authorized officer and enlisted personnel strengths, with specially selected officers and enlisted personnel of the highest caliber being ordered to the Troop Training Units."

Time does not permit the preparation of an article which adequately sets forth my opinion of the Troop Training Units. Suffice it to say that the Troop Training Units are living embodiments of Marine Corps amphibious knowledge, and that vis-à-vis to the operating forces of the defense establishments.

RALPH M. WISMER,
LtCol, USMC

ED: Thank you very much for the enlightening information on the TTUs. It seems the only way we can pry material out of some of our readers is to offend them with a colossal *bust*. We still pay very well for good articles, too.

### Chestnut Strategy . . .

DEAR SIR:

Of interest, not only to psychologists and psychiatrists, but to all thinking people today is the perennial question, "How can we understand or attempt to understand the thought process of the Communist?" Many prominent authors have written volumes on the subject, but *Stalin's Chestnut Strategy* gives, in substance, the real combination to their inner-most thoughts. Two basic guides dominate the Communist as he reasons his actions: (1) Machiavellian tactics—the end justifies the means, and (2) the old equation (thesis—antithesis result synthesis) so ably expounded by philosophers. This method of thought was well brought out in this excellent article. We have only to stir these two ingredients with the spice of constant embryonic revolution that the Communist seeks to generate, bake them with factual awareness, and the prepared meal is the Communist mind as it confronts the world today.

KARL D. MORRISON,
2dLt, USMC

### Small Wars . . .

DEAR SIR:

I would like to compliment LtCol Heinl on his very fine article in the April issue, *Small Wars—Vanishing Art?* Before the war the Marine Corps conducted a comprehensive investigation of the subject. The results of that survey were published in a book which I doubt if one company in 10 possesses today, namely *The Small Wars Manual* (1940).

Why couldn't that very excellent volume be revised in the light of present equipment, etc., and be redistributed to all units? Particular emphasis should be paid during the revision to the chapter pertaining to the unit training schedule. In the old copy if I recall correctly the master outline was for a unit of regimental size, whereas past performance by partison-commando units seem to suggest that an organization of company or battalion strength would be more appropriate.

Why couldn't battalions of the FMF devote a quarterly period of their training programs to the study of independent small unit tactics and operations?

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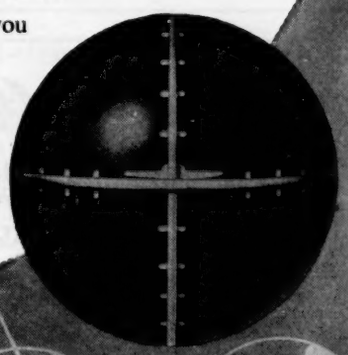

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peacetime duty is. Perhaps we would all take to a change in the training programs from the usual amphibious operations studies.

Congratulations Col Heinl for reminding us of a very vital portion of our training program which since the expansion of the Marine Corps at the beginning of World War II has been very seriously neglected.

JAMES R. MCENANEY,
Cpl, USMC

ED: For years the Marine Corps has stressed small unit tactics and techniques. This serves a dual purpose. It prepares companies, battalions, and regiments for independent action; and well-trained smaller units are easily welded into good divisions and corps.

### More On Small Wars . . .

DEAR SIR:

I was very interested in Col Heinl's recent article, *Small Wars—Vanishing Art*, and many officers will support the ideas and suggestions which he has advanced. Not long ago an ex-paramarine officer and I discussed ideas similar to the Colonel's and thought that the Corps would do well to reactivate small versatile parachute or raider-type units to increase our effectiveness as an amphibious organization. Units in which physical fitness, individual initiative, scouting and patrolling, and general small unit military excellence would be stressed. In fact, it is felt that the Corps as a whole should be trained as an organization of highly-trained commandos. I have even heard such suggestions for an all-around special operations force in the *Infantry Journal*. We certainly have enough regular and reserve officers and men who have had experience in guerrilla, raider and partisan-type operations from which to draw instructors and training and operating doctrine.

Not only would such a unit or training of this type be beneficial but would also raise the state of military excellence throughout the Corps. It would also serve to engender more *esprit de corps*. The Corps is full of officers and men who would clamor to join such a unit or partake in such training. We might even reactivate some of our parachute units.

The Corps will surely be expected to perform such jobs as the Colonel points out in any future wars—large or small. Therefore, it behooves us to attain a high state of training in the field of small wars and commando-type operations. Marines who are truly triphibious and who could drop on the enemy from the skies, strike him from the sea or even come up from the sea in submarines would not only catch the public fancy but would show the American people that their Marine Corps was again ready to tackle any job assigned it.

DEAN N. MCDOWELL,
Capt, USMC

ED: Traditionally the Marine Corps has trained to perform any assignment regardless of size or mode of transportation to the objective. The GAZETTE's interpretation

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of current training directives is that this traditional objective still is our goal.

**Promotion . . .**

DEAR SIR:

I have no desire to make an issue of TSgt LeBouf's letter regarding the promotion system (Apr50), but would like to enter an opinion.

To begin with, the principles of the promotion system as outlined in Chapter 9, MCM, 1949, are sound, not only to the Marine Corps as a component of the Armed Services, but to the individual as a member within that component.

In order for the Marine Corps to maintain the traditional best branch of service, it must, among other factors, have efficient, experienced staff NCOs as its backbone. Can a better way be devised to select these NCOs—than to have them compete with all the other men of the same rank and in the same occupational field? Is there a better way for the Marine Corps to be assured that a man has experience than to make it mandatory that he have a minimum of four years service as a technical sergeant before advancing him to the top enlisted pay grade? It must be borne in mind that the foregoing qualifications serve to get a man before the promotion board. If he has the superior knowledge and ability that some of LeBouf's "restless" staff NCOs seem to have, it will certainly be reflected in his examination score, and the fitness report markings that will have accumulated by the time the composite scores are computed. If he is *really* outstanding when it counts the most, Paragraph 9365, MCM can be relied upon.

Is the new system fair to the individual? It surely beats "the old way." The old story "I was first on the list at Camp ..... then I was transferred to .....," is no more. Once a man has passed the examinations, and his name is on the list at HQMC, it matters not to where he is transferred or how many times he has changed duty stations. This also goes for the "I just wasn't in the right place at the right time" routine. Four years isn't long, and it does stop "favorite" promotions; besides, it all counts on 30, so what are we worried about?

SHERMAN T. WICKER,
TSgt, USMC

**Transport Helicopter . . .**

DEAR SIR:

LtCol Hittle's article *The Transport Helicopter* is impressive because of its furtherance of a basic principle of war to meet modern demands, and because of the analogy which can be drawn to the cavalry of yesteryear.

In the past, opposing armies were primarily confined to longitudinal movements, except for local lateral deployment. With the advent of cavalry lateral deployment was utilized on a larger scale. However, as pointed out by Fletcher Pratt in *Eleven Generals*, the accepted school of thought was that cav-

alry was a shock force, designed primarily to disrupt communications and supply lines, and to deliver those stunning blows necessary to clinch a winning battle. Then in the Civil War the idea of using horses to transport large numbers of troops, who could fight as infantry, to a place of tactical advantage, blossomed into maturity. Now what is the principle which was being applied? Movement of a strong, but auxiliary force, to a vantage point with greater speed than the defending forces could muster. It is the ability to attack in force at more points than the enemy can successfully defend.

In modern war we have bombers to disrupt communications and supply lines, tanks have become a morale-shattering shock force, but the idea of transporting infantry troops has lagged behind. Finally the third dimension was utilized by our present specialized airborne troops. Among their achievements, and of special interest to Marines is the assistance which they gave to the landing at Utah Beach in June 1944. According to Eisenhower's book, there were grave doubts as to whether this beach could be successfully taken without the assistance of airborne troops dropped inland. Two divisions were dropped behind the beach, the Germans gave, and the landing was a success. But there are limitations to the use of paratroops, and glider troops. As Col Hittle points out, they must reorganize after landing, they need proper drop areas, they have a limited range, and in addition the troops need a certain amount of specialized training.

Once control of the air and sea are achieved there seems to

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be nothing but good that can be said for incorporating the helicopter into our present system of beach landings. Troops landed in force behind the beaches can take a considerable amount of pressure off of the landing, by physical assistance. Not to be lost sight of, is that the very existence of a helicopter landing force would pose a threat, which if guarded against will cause the enemy to expend effort and material and men. This results in an indirect benefit to the landing force in the form of weakened beach defenses.

In considering the remoteness of another "island war," it seems that the helicopter idea should not be limited to assisting beach landings, but should be expanded to include the mobile transportation of infantry in a land war, for in these days of continuous fronts lateral deployment is almost as effectively limited as it is at the beach line. The logical development then is the utilization of the third dimension to transport that strong auxiliary force into positions of tactical advantage, and the theories of such men as Sheridan are equally applicable it seems whether the troops are transported by horse or by helicopter.

For those men who must fight for the very existence of the Navy and the Marine Corps, and the appropriations for same, they have here a very potent argument. While the technique of helicopter landings does not offer a panacea to cure all the ills of atomic war and atomic defense it does offer a partial solution to one problem. No one doubts what the effect of a well placed atom bomb on southern England around

June 1st 1944 would have been. We might still be fighting. Col Hittle points out, and effectively, that a landing can now be made without any mass concentration of supplies prior to D-day. He also points out that the helicopter supported by the fleet can considerably increase the range of third dimensional maneuver. These are valuable innovations in military thinking. A couple of divisions of infantry troops landed behind the enemy's lines at the appropriate time and place might mean the turning point of a war. The very threat of the ability to perform such an operation could be a deciding factor, but to materialize, the idea depends upon carriers, and the battleships to protect those carriers. Such ships are not built over night, and if we wait until the last minute to put the idea into effect it will probably be as potent as a spit-ball. I hope that this helicopter technique is as favorably received by those at the helm as it was by me.

WILLIAM L. OTTEN,
2dLt, USMCR

**Initials Are Out . . .**

DEAR SIR:

Although, in general, I have little but praise for the GAZETTE, I must say that I deplore your policy of having book reviews signed with initials. Why not the full name? Personally, I regard book reviews seriously (even those I read three or four times in various newspapers and magazines), and I like to know who the author of the review is. Quite often I find that very helpful in evaluating the review itself.

I grant that initials help make a game of the matter—but did you ever have a reader who ended up in a straightjacket? Who in the name of thunder is EPP Jr? Is HS, Houston Stiff? Does JP stand for James A. Pounds, III? It all sounds like a bureaucrat's nightmare.

I would write more but I'm scheduled to HDO with a VBACG before going on to the MBT to see HH in JL's TWT. HH.

BV
(Bertram Vogel)

ED: In reply to your questions: 1. After this issue the reviewer's name will appear at the end of each book review. 2. To the best of our knowledge no readers have ended up in straightjackets. Maybe they don't read our reviews. 3. EPP Jr is LtCol E. P. Pennebaker, Jr, an instructor in the Aviation Section, Marine Corps Schools (MCS). 4. HS is Houston Stiff. 5. Sometimes JP stands for James *A*. Pounds, sometimes we use JAP. It all depends on whether the Editor or Managing Editor marks the copy. 6. Please send a cryptographic device to decipher your last paragraph.


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# Employment of the

**By Capt Robert A. Strieby**

PRESENT PLANS OF THE DIVISION OF AVIATION, HEADquarters, USMC, call for the incorporation of light, observation/liaison helicopters in the presently organized VMO "grasshopper" squadrons. These squadrons are scheduled to receive their first helicopters in the near future. With the acquisition of helicopters, the VMO squadrons will be able to place at the disposal of troop commanders a most modern, highly versatile and, as far as the Marine Corps is concerned, a previously unused air vehicle capable of a new high in air utility.

The experience of Marine Helicopter Squadron One (HMX-1), gained through more than two years of operating helicopters on missions normally accomplished by light aircraft, has demonstrated that helicopters are capable of performing all of the air roles normally assigned to airplanes of the OY type, and, in most cases, the helicopter can perform these missions with less effort, in less time, and more efficiently than the small, fixed-wing airplane. In addition to replacing the fixed-wing airplane, the helicopter is capable of performing entirely new air missions for which its unique flight characteristics, the ability to fly at air speeds varying from zero to maximum helicopter speed, the ability to hover and fly backward and sideward, make it suitable. Commanders will find the helicopter capable of doing jobs now normally accomplished by vehicles or personnel on the ground. They will also find that generally the accomplishment of these tasks by helicopter may mean a great saving of

*Capt Strieby formerly was project officer for HMX-1. He is now attached to the Bureau of Aeronautics. This article is his first contribution to the* GAZETTE.

# Small Helicopter

time and expense in the form of both materiel and man hours of labor.

The helicopter is a new development, generally, and is especially new to the Marine Corps. Since the only helicopters in the Marine Corps have been located in Quantico, Virginia, and operated by HMX-1, a unit primarily interested in research, development and experimentation with helicopters, there exists a lack of operational "know-how" throughout most of the rest of the Marine Corps regarding this new vehicle, which soon will become available for use. It is for the purpose of helping to alleviate this lack of helicopter information that this article is written. A pamphlet covering the same material, but in greater detail, is being prepared by HMX-1 for dissemination throughout the Marine Corps as a guide to the operational capabilities and limitations of the light helicopter.

One of the original tasks assigned to HMX-1 was the evaluation of a small helicopter as a possible replacement for the OY airplane in the VMO squadrons. During the process of evaluation, HMX-1 has amassed a considerable amount of information on the operation of the helicopter on observation/liaison missions. Much of this data was obtained from flights wherein the helicopter was being compared with the OY airplane. On other flights the helicopter was being tried on a job never before attempted. All flights were performed on either regularly established test flights, operations with units of the Marine Corps Schools, test work with the Marine Corps Equipment Board, or exercises with units of the Marine Corps and Navy.

Along with operational data received from the evaluation, some very interesting observations concerning the helicopter, its operation, and its value were made by officers previously inexperienced with helicopters, who were making an acquaintance with this strange machine for the first time during the course of the evaluation program. These observations and comments have been included in this article to illustrate typical reactions of officers who were for the first time employing or witnessing the employment of the helicopter.

Presented herewith is a summation of the performance of the small helicopter in the field of aerial observation and liaison. These missions were actually accomplished and found operationally feasible by Marine Corps helicopters operating with units of the Marine Corps and the Navy. They are offered in the hope that they will provide offiecrs and men with information on these missions that this type of helicopter can be expected to perform.

### Aerial Reconnaissance and Observation

ONE of the most important functions of the light aircraft assigned for direct cooperation with troop units is the performance of aerial reconnaissance and observation missions. Light aircraft performed such missions throughout the last war and performed them satisfactorily. But it seemed apparent at the outset of the evaluation that the helicopter would possess a greater inherent capability for such missions than does the light, fixed-wing airplane.

The first and most apparent advantage of the helicopter is the fact that it requires no specially prepared surface for its operation. Of course, not much preparation of field areas is required for the light OY airplane. Still, some preparation of a runway of sorts is required before continuous air operations can be accomplished. And the improvised airdrome, once in com-

**The American "First Sergeant" is first successful pulsejet helicopter. Engines are on rotor blades.**

mission, has to be maintained in a state of commission to insure the ready availability of light aircraft when called for by troop commanders.

Helicopters, of course, need no specially prepared field for operation. Any reasonably flat surface with sufficient solidity to make it capable of sustaining the helicopter can be put to immediate use as a 'heliport." The relative small size of the light helicopter makes small field areas adequate. Helicopter operating areas can be moved readily to keep in close proximity to actual operating areas, thus reducing the time of flight required for flight to and from objectives, and the more expeditions accomplishment of assigned missions. This advantage of helicopters, although directly applicable to aerial reconnaissance and observation, applies to all field operations of the helicopter, and represents a constant advantage over any type of fixed-wing aircraft equipment.

DURING the evaluation of the helicopter to replace the OY aircraft, the complete syllabus of the Air Observation School, which convened at Quantico on 19 July 1948, was duplicated in the HO3S-1 and the HTL-2 helicopters to give a comparison between the helicopter and the OY on all of the missions covered by the syllabus of the Air Observers School. Observations were obtained from observer students, observer instructors, and pilots on the comparative performance on missions flown.

There was no difficulty in accomplishing all of the missions normally assigned to OY aircraft in the helicopter. Generally, the time required for the accomplishment of any specific mission was less for the helicopter than for the OY aircraft, since such time-wasting features as taxiing at airfields, time spent in traffic patterns, and time spent in orbiting objectives were eliminated by use of the helicopter. The visibility from the helicopter was usually superior to that found in the OY aircraft. Helicopters were capable of flying at lower altitudes and at lower speeds than were the OY airplanes, thus reducing the amount of aerial maneuvering required for proper observation of an objective on the ground. Helicopters were generally capable of operating in weather that grounded all fixed-wing aircraft. Missions requiring special equipment and special preparations for accomplishment by fixed-wing aircraft (message drops, message pickups, resupply by air, personnel transport) were accomplished as a matter of routine by the helicopter without need of special equipment or preparations.

The OY aircraft, however, proved to be easier to maintain under field conditions than the helicopter. This probably will be one constant advantage of the light fixed-wing airplane over the helicopter, since the helicopter is basically a much more complicated machine than the light airplane, and will, as a consequence, require a greater effort in maintainance. The OY aircraft also showed an advantage in speed over the HO3S-1 and HTL-2 helicopters used in the evaluation. This advantage, however, will be short lived, since newer, more modern designs of small helicopters will equal and in some cases surpass the speed of the light aircraft of the OY type.

DURING a recent exercise a small Bell helicopter, the HTL-2, was operated from the deck of an LST of the 522 class during the course of the landing exercise. The purpose of this employment of the helicopter was to test its operation from floating bases during the initial stages of the assault landing.

The helicopter was able to operate under all conditions encountered on the operation, both while the ship was under way and while at anchor in the transport area. No modification of the LST was required other than the removal of lifelines and obstructions on the deck area that was used for landing and taking off. A variety of missions were easily accomplished. In a report of the operation compiled by HMX-1 the conclusion was reached that the helicopters could be operated from vessels of this type on missions of boat wave observation and direction, air tactical observation, gunfire direction, messenger service, as well as a variety of utility missions, such as supply, personnel transfer, and terrain reconnaissance.

In operations with the Marine Corps Schools, detailed terrain reconnaissance missions of areas on the Marine Corps Reservation, Quantico, Virginia, have been accomplished by helicopter. These missions were originally flown for instructors who desired to reconnoiter field areas but were faced with impassable road conditions for vehicular traffic. In the helicopter, these officers were able to accomplish their reconnaissance in about one quarter of the time required normally by vehicle under optimum conditions.

ON ONE occasion a portion of one of the classes of Amphibious Warfare School, Junior Course performed a routine terrain evaluation and reconnaissance from helicopters while the remainder of the class reconnoitered from the ground. Comparative results showed that those students who performed the reconnaissance from the helicopter not only finished in about one fourth the time required for students performing the reconnaissance on the ground, but that their reconnaissance had enabled them to make a much more complete and accurate evaluation of the terrain under study. It was generally agreed that the helicopter offers similar observation of terrain to that afforded officers working a tactical problem on a sand table. The helicopter's position at altitude affords almost complete visual inspection of the entire area under reconnaissance at a glance.

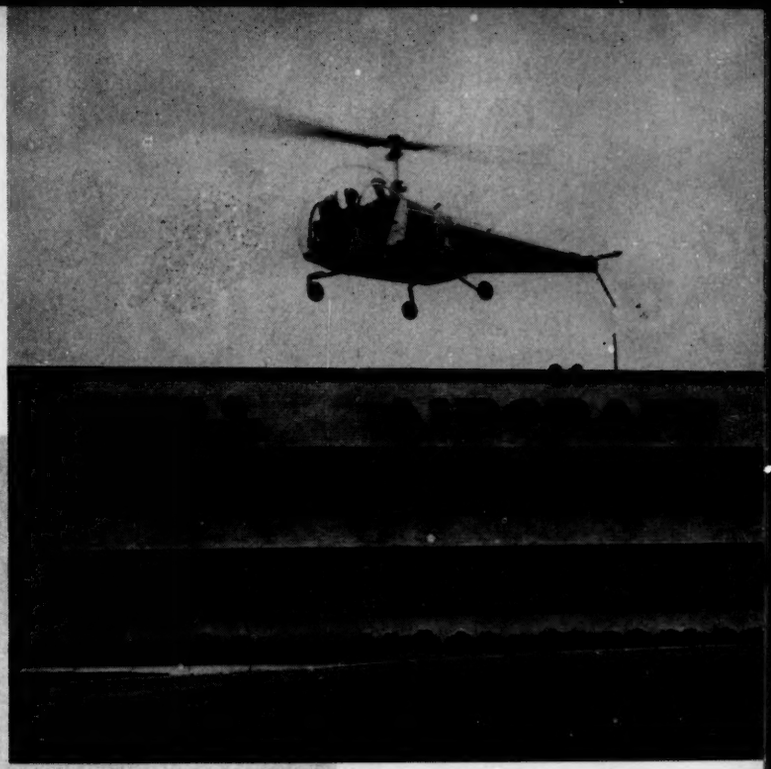
## Aerial Adjustment of Artillery and Naval Gunfire

UNDOUBTEDLY one of the most valuable functions performed by observation aircraft is the aerial adjustment of artillery and naval gunfire. This was one of the vital roles performed by light fixed-wing aircraft in the last war, both in the Marine Corps and in the Army. And here again it seemed readily apparent that the helicopter would be able to surpass the performance of the light airplane in the successful accomplishment of this vital mission.

A great number of gunfire adjustment missions has been flown by the helicopters of HMX-1 during the last two years to arrive at an accurate evaluation and comparison between the helicopter and the light fixed-wing aircraft on this mission. The HO3S-1 and the HTL-2 helicopters were used during the course of this comparison.

The results of the comparison indicated that in most respects the helicopter enjoyed a superiority over the fixed-wing airplane in operating on fire adjustment missions. Observation from the helicopter was greater than from the OY airplane. This resulted both from the fact that the flight characteristics of the helicopter enable it to be operated in such a manner as to facilitate observation of shell 'splashes', hovering flight, and ability to stay in a more constant position in relation to the gun-target line. The helicopter was able to take advantage of terrain features to conceal itself from enemy observation and fire. The helicopter was also capable of establishing personal contact with the artillery unit for whom it was performing fire adjustment missions by the simple expedient of landing at or near the gun positions for conference, or to establish communication in the event of a malfunction of communications equipment or the lack of proper co-ordination. Time required for the helicopter to take station or to be ready for assignment on adjustment missions was less than that required for the airplane, due to the fact that the helicopters utilized a field area close to the actual site of operations, while the airplanes were forced to fly from their airstrip some distance away.

Results of the comparison also showed that the seating configuration for the pilot-observer team was considerably superior in the HTL-2 helicopter (pilot and observer side by side) than it was in the HO3S-1 (pilot and observer tandem, with observer seated in the rear of the pilot). Consequently, this configuration was adopted for incorporation into the requirement for the small helicopter to be used by the VMO squadrons, and helicopters operated by the Marine Corps in the future will have this desirable feature. This seating arrangement places both pilot and observer in a plastic 'bubble' in the nose of the helicopter, affording the most optimum visibility available short of a perch on a pole.



**The Bell Aircraft HTL-2 is a two place helicopter used for observation, liaison, and as a trainer.**

The OY airplane was considered superior to the helicopter in being less vulnerable to enemy ground fire. Tests conducted by HMX-1 showed that while the helicopter and the light airplane are vulnerable to attack by hostile fighter aircraft, the helicopter is the more vulnerable. Consequently, most officers engaged in aerial observation work were of the opinion that the helicopter was less suited for operation behind enemy lines than the light airplane. However, helicopters of more modern design will have increased speed and acceleration characteristics which should help to overcome these objections to helicopters in the performance of these missions behind enemy lines.

Helicopters were able to perform artillery adjustment missions as a matter of routine in weather that would have kept fixed-wing aircraft grounded. Gunfire adjustment missions have been flown during the syllabus of the Air Observers School, in connection with demonstrations of artillery firing by units of the 10th Marines at Quantico, and during fleet exercises, 1949, and other exercises.

## Aerial Wire Laying

THE AERIAL laying of communication wire systems represents another capability of the helicopter in a mission which has in the past been accomplished by surface vehicle or carrier. Although many unique devices have been employed to expedite the installation of wire systems in the field, particularly where field conditions are difficult, this task still falls on the shoulder of the wire team

**The ability of the helicopter to hover and proceed at slow speed makes it an ideal photography vehicle.**

in its jeep, or, as is most usual in 'close to the front' operations, on the backs of the individual Marines.

Aerial installation of wire systems was accomplished, on occasion, during the last war by light aircraft. However, special equipment and arrangements were required and accuracy of actually putting the wire over a specific area on the ground was limited by the flight characteristics of the airplane, so that these operations never became routine. It appeared to HMX-1 that the helicopter, because of its unique flight characteristics, would be able to do an acceptable job of installing wire from the air, particularly over areas denied to the man on the ground. It was decided that if these aerial wire-laying missions were to become routine it would be necessary for the helicopter to accomplish this mission with an absolute minimum of special equipment, preparations, or modifications to the helicopter. This would enable any available helicopter to be called in to perform this vital function and would reduce the time required to complete the mission. Consequently, all tests and operations of wire laying from the helicopter were conducted with this in mind.

Tests of aerial wire laying were conducted concurrently with the Marine Corps Equipment Board at Quantico, who, at that time, happened to be evaluating new high speed wire dispensers for use in the Marine Corps. It was found that these new high speed dispensers answered the wire dispenser problem for the helicopter in a very satisfactory manner. The amount of special equipment required was zero. All that was necessary was for the wire team to attach the standing end of the dispenser wire at the point of helicopter take-off. The dispenser was then placed in the open door of the helicopter, where it was held by one man, and the helicopter took off, paying out behind it the wire stripped out from the dispenser. Wire was laid from zero to 80 knots with no difficulties. It was possible for the wire to be laid along trails and roads without difficulty. By connecting several dispensers in tandem, it was possible to carry up to eight miles of wire in the HO3S-1 helicopter. During the actual pay-out run of the wire-laying helicopter, telephonic communication was possible from the ground station at the standing end of the wire to the signalman in the helicopter, who had a telephone connected to the wire being laid. During the course of tests with the Equipment Board this telephonic communications between the helicopter and the ground, over the wire as it was actually being paid out, facilitated instructions to the helicopter from the ground.

The advantages of laying wire by helicopter were obvious. It could be installed accurately and at a very small fraction of the time required by other means. Wire could be laid just as easily across areas inaccessable from the surface as it could be laid across easily negotiated terrain. Since no special equipment or special modifications were needed on the helicopter, the helicopters themselves were available instantly, on call, for this mission.

Helicopters of HMX-1 have performed wire-laying missions in conjunction with tests performed by the Equipment Board, on demonstrations for the Marine Schools, on actual field operations with units of the Second Marine Division at Camp Lejeune, and during the course of fleet exercises, 1949, on the Island of Vieques.

The reaction of the wire laying by helicopters was especially enthusiastic, particularly among most communications officers who witnessed wire put in by the helicopter in a short time and with no great expenditure of men and effort.

### Aerial Resupply and Evacuation

THE ABILITY of the helicopter to hover, fly at a very slow speed, and to land in small field areas makes it a

valuable vehicle in resupply and evacuation missions. Although the small helicopter, because of its restricted cargo space and limited payload, cannot be classified as a transport helicopter, still the amount of cargo and personnel that this helicopter is capable of transporting makes possible movement of some high priority cargo and personnel.

The ability of the helicopter to proceed at very slow speeds close to the ground makes possible the delivery of items of equipment, food, ammunition, medical supplies, etc., to troops in forward areas with a minimum of effort and time. The flight characteristics of the helicopter makes possible the "on time" delivery of emergency supplies when normal supply channels are disrupted.

The fact that the helicopter can land in small areas, or even on roads, trails, etc., puts in the hands of the troop commanders a very effective vehicle for the removing of wounded personnel to hospital sites and for the transfer of key personnel from area to area as needed. These missions generally can be accomplished when ground and weather conditions may well have slowed down or stopped other means of transport.

Aerial resupply and evacuation missions have been flown by helicopters of HMX-1 in connection with the syllabus instruction of air observers at the Air Observers School, on demonstrations before units of the Marine Corps Schools, during the course of FLEX-49 and other exercises.

### Aerial Photography

THE ABILITY of the helicopter to hover and proceed at very slow air speeds, coupled with the great degree of visibility afforded in the helicopter, make it a very practical photography vehicle. The helicopters of HMX-1 have flown a great number of aerial photography missions in the past two years. All the photographers who flew missions in the helicopter have been enthusiastic about the photographic capabilities of the helicopter.

The great degree of visibility available to the photographer makes the use of hand-held cameras an easy task. There is no slip-stream to contend with. The ability of the helicopter to maintain any position in the air enables the photographer to direct the pilot to take a position exactly suited to the photographer's requirements. Slow flight speeds enable photographers to shoot a number of shots from one position to insure getting a satisfactory picture.

The helicopter, because it can operate with safety close to the ground, can generally get much closer to specific photo targets, thus affording a greater degree of picture detail. The helicopter affords the photographer a "raised platform" from which to shoot close obliques of objects on the surface.

Hand held cameras make possible the immediate use of any helicopter on photo missions. However, for accurate photo work, the helicopter is capable of being equipped with precision camera mountings which enable the helicopter to accomplish more precise photo missions, such as the taking of altitude vertical photographs for eventual incorporation into photomaps or photo-mosaics. Thus equipped, the helicopter is capable of duplicating the aerial photographs obtained from any light plane.

The disadvantage for the helicopter in this role seems to be the relative vulnerability to enemy fires when compared to the relatively faster fixed-wing airplane. Observers and photographers were of the opinion that the helicopter would be unsuitable for extensive photo missions over enemy lines because of the vulnerability of the helicopter to enemy fires. However, newer helicopters will have greatly increased flight performance which may min-

**Sikorsky S-52. No special equipment is required to convert the helicopter into a wire laying machine.**

**Kaman K-190. Flight characteristics make helicopters vehicles for control of troop and vehicular traffic.**

imize the deficiencies of the helicopters presently in use as far as considerations of lack of speed and vulnerability are concerned.

### Aerial Traffic and Troop Control

THIS TYPE of aerial activity is new. However, the flight characteristics of the helicopter make it entirely practical to control troop, vehicular, and boat traffic from this highly mobile aerial platform. In doing so, the helicopter can perform many direction and coordination activities accomplished by a variety of means of surface agencies, such as boat direction vessels, beachmasters, military police, etc. Although present experience in this field is very limited, operations conducted to date would seem to indicate that these surface control functions can be combined for accomplishment by helicopter and the total of the direction and coordination effort, so particularly required in amphibious operations, can be easily and quickly accomplished.

The use of the helicopter as an aerial direction station was recognized when, in July, 1948, helicopters of HMX-1 operated in aerial evaluation tests of various types of portable high-output loud-speaker systems, then under test by the Marine Corps Equipment Board. Verbal directions broadcast from the helicopter-borne speaker were easily and clearly understood by personnel on the ground at all operating altitudes of the helicopter up to a thousand feet. The use of this equipment, coupled with the ability of the helicopter to operate in such a manner so that traffic activity on the surface was at all times under surveillance from the helicopter, indicated that there would be a definite use for the helicopter in this field.

Consequently, it has been possible to incorporate missions of this type in various exercises and problems with other units of the Marine Corps. Although the total experience thus gained has been small, the results have indicated that this capability of the helicopter should not be overlooked in the planning of amphibious operations where helicopters will be available for employment.

Helicopters of HMX-1 have engaged in this type of mission in connection with tests with the Marine Corps Equipment Board, on fleet exercises, 1949, and with the Second Marine Division. Comment on this mission of the helicopter has been limited by the small amount of actual operation of the helicopter on this job. They can be summed up by the comments of one officer after witnessing a demonstration of the helicopter in directional activity:

"This is a very handy gadget—This would be excellent for demonstrations in controlling troop and boat traffic and numerous other jobs."

**The helicopter is ideal air and ground liaison vehicle.**

There is no doubt that other capabilities of the helicopter will be realized as helicopters begin to operate continually with troop units of the Marine Corps. And as performance of the helicopter increases with refinement and advancement of design, the utility value of this unique air vehicle will increase.

It may be well in conclusion to point out a few of the factors which will affect employment of the helicopter. It will, of course, be necessary for the officer planning

**Bell XR-15 was designed for use by Army Ground Forces.**

employment of the helicopter to keep these facts in mind:

1. It seems inevitable that there will always be an overwhelming number of jobs which the helicopter is capable of doing easily, quickly, and efficiently, and never enough helicopters to do the jobs. This will dictate the establishment of some form of centralized control of the total helicopter effort in order that it may be expended in the most economical manner. This control probably will have to be exercised at the Attack Force—Landing Force level with a system of requests from units desiring to utilize helicopters on a mission, an evaluation of the mission requested in the light of the operation generally, the assignment of a priority to the mission, and the assignment of helicopters to missions in order of priority to insure doing "first things first".

2. It must be remembered that present helicopters have demonstrated a vulnerability to enemy fighter aircraft greater than the light airplane. Any employment of helicopters must be accompanied by local, if not complete, air superiority. Any violation of this principle should be seriously considered and the high loss factor on helicopter operations in the face of the enemy air opposition be taken into account prior to any decisions to employ helicopters under this circumstance.

3. Although the operation of helicopters will require little or no expenditure of effort spent in constructing

**Bell Aircraft Corporation's HTL-1 shown hovering.**

airfields or operating areas, it should be remembered that helicopters, in general, require a greater degree of maintenance effort to keep them flying than do light aircraft. They also require a greater number of operating spares. Any planning for the employment of helicopters must take these facts into account.

4. The helicopter will be capable of operating from suitable surface vessels during any sea movement to the objective area. This capability will furnish service on messenger drops and pickups, the inter-ship transfer of maps, overlays, etc., and ship-to-ship transfer of personnel for conference, briefing, etc. These missions can generally be accomplished with surface vessels underway, thus in no way interfering with the actual movement of the attack force to the objective area.

The helicopter as an air vehicle rather than an airplane escapes the specialization common to the employment of fixed-wing aircraft. And the helicopter's flight characteristics undoubtedly will make it a very close connecting link between air and ground. This will require officers, both line and aviation, to become even more acquainted with one another's problems and will foster an even closer integration of effort in amphibious operations wherein helicopters are employed.

As helicopters become available throughout the Marine Corps, many new jobs for the helicopter will undoubtedly be discovered. Advancing aeronautical technology will supply better and better helicopters to do these jobs. Helicopters, now and in the future, will supply a new and unique tool for the more efficient accomplishment of the military functions of the United States Marine Corps. USMC

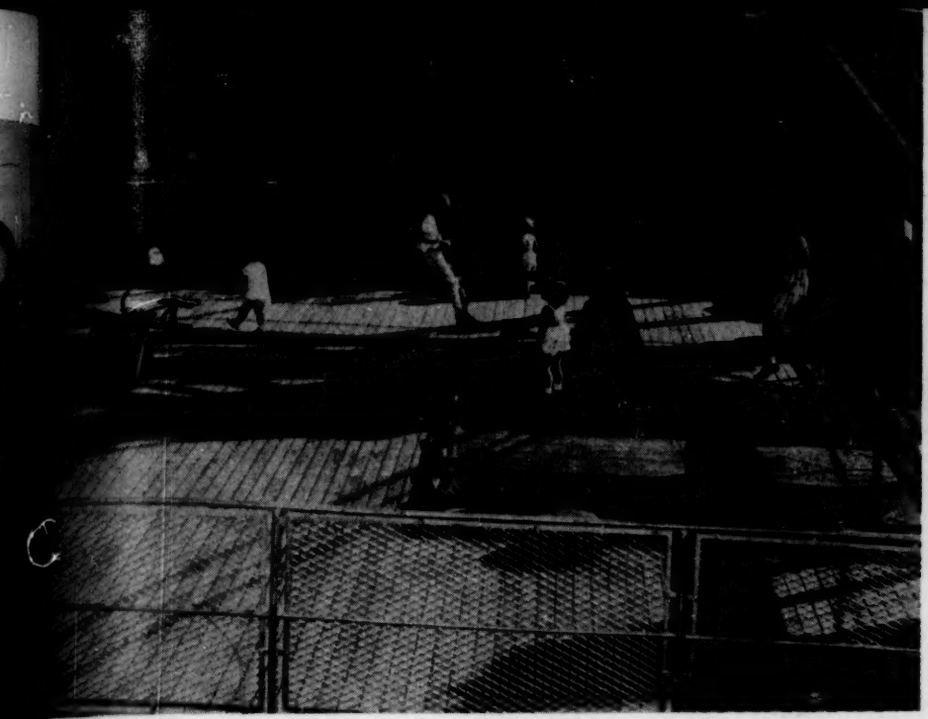
This is the home of the Second Guard Platoon, Marine Barracks, 15th Naval District, Balboa, Canal Zone, ultimate duty station for 1stLt R. L. Nichols.

Lt and Mrs Nichols arrive aboard ship. All luggage is handled by special details.

# Bon Voyage

Last month the GAZETTE published an article entitled *Going Overseas?* and while assembling material and pictures, received this set of photographs from Maj Thomas S. Witherspoon, MB, Balboa, Canal Zone. It occurred to the staff that some of the actual mechanics of moving one's dependents overseas might be of as much interest as the description of conditions at overseas posts and stations provided in *Going Overseas?* Shown are 1stLt and Mrs Robert L. Nichols and children, Bobby and Susan. Place of departure: Norfolk. Ship: *President Hayes.* Destination: Balboa, Canal Zone. Facilities of the *President Hayes* are not necessarily typical of all ships used for transportation of dependents by the U. S. Navy.

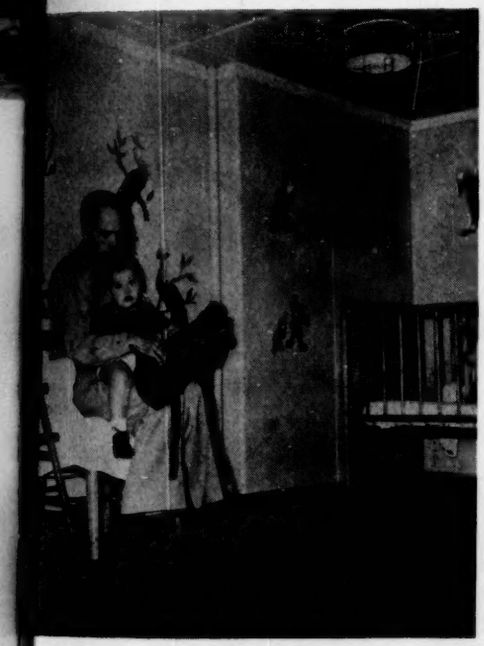
Ship's officers conduct tour for dependents in order to familiarize them with shipboard routine. Many questions are asked and answered. After tour, the dependents feel at home.



Every precaution is taken to safeguard children on deck. Fenced-in play area gives mother a break.

Ship's store provides both luxuries and essentials.

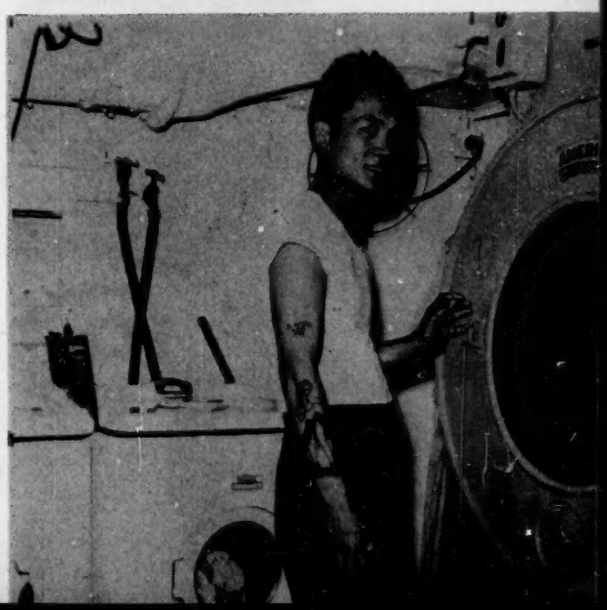
*Hayes* has excellent facilities for such things as storage of baby food and sterilization of bottles.

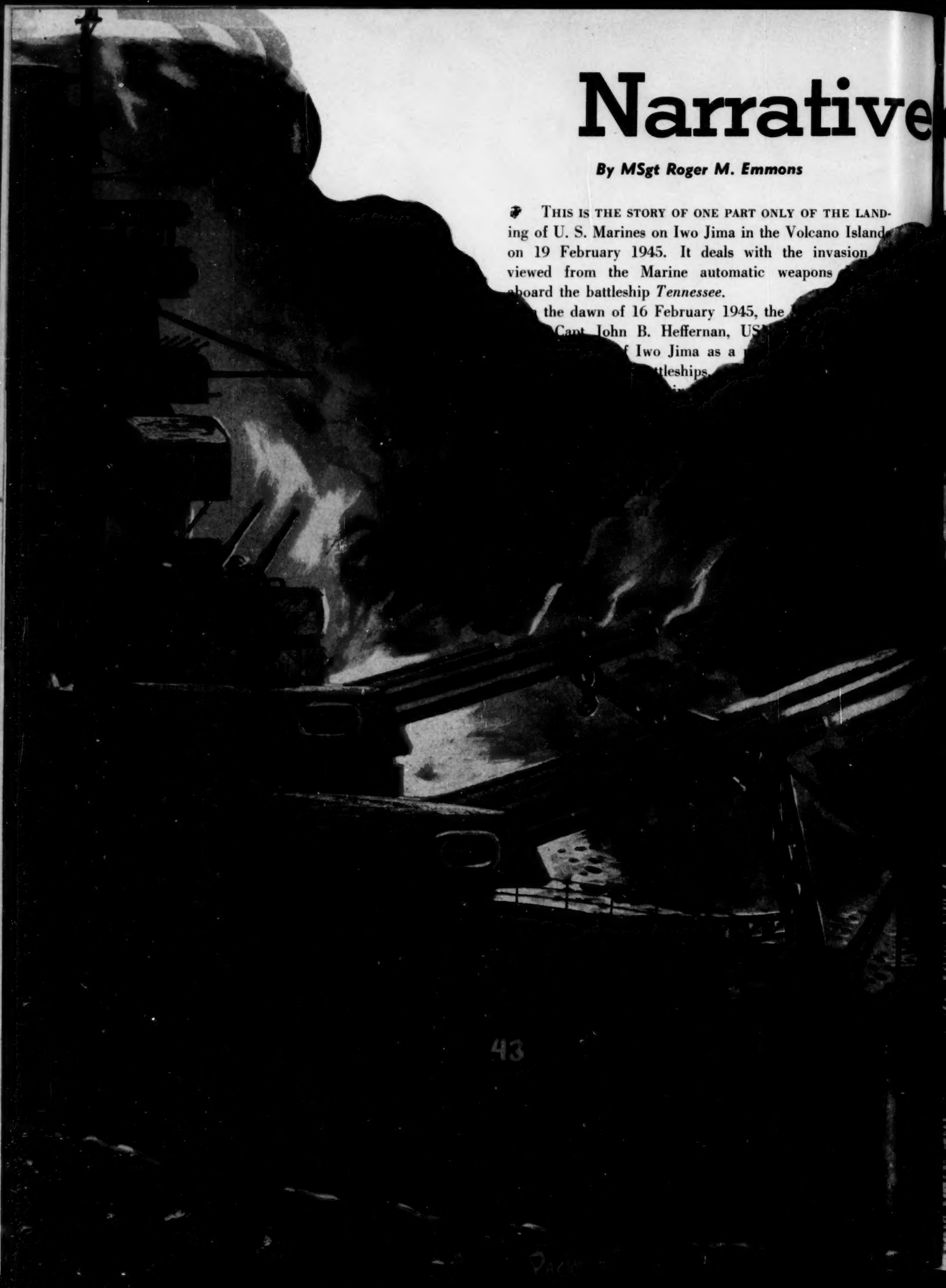


An attractive, air-conditioned nursery is provided for feeding and caring for the small children. Lt Nichols dresses Bobby in the uniform of the day.

Dependents are assured expert medical care at all times. Pills for seasickness are available if needed.

Mothers are pleased to find automatic washers and driers for babies' diapers.





# Narrative o

**By MSgt Roger M. Emmons**

THIS IS THE STORY OF ONE PART ONLY OF THE LAND-
ing of U. S. Marines on Iwo Jima in the Volcano Island
on 19 February 1945. It deals with the invasion
viewed from the Marine automatic weapons
aboard the battleship *Tennessee*.
the dawn of 16 February 1945, the
Capt John B. Heffernan, US
f Iwo Jima as a
ttleships

# e of Iwo Jima

battery concentrated at slopes of Mt Suribachi while the secondary battery directed its fire against the high rocky cliffs at the north end of the beach.

No enemy planes molested us, but black puffs dotted the air where Jap anti-aircraft batteries sought our spotting planes. One explosion and a number of fires were observed ashore. The Japanese shore batteries returned the fire for the first time during the afternoon, but we were not hit, although the enemy's salvos kicked up columns of water around the *Tennessee*.

About 1800 the *Tennessee* ceased firing, recovered her two aircraft, and then retired for the night in company with other warships of the gunfire and covering force.

Next morning at 0700 the bombardment was resumed while the minesweepers continued their work. The initial range was over 10,000 yards. About 0830 the *Tennessee* closed in and carried out the bombardment at ranges of 3,000 to 5,000 yards. As the ship lay in very close to the beach her Marine 40mm guns were brought to bear on shore targets.

During this time we came under fire of concealed Japanese shore batteries. From time to time enemy salvos smashed tall pillars of water 'round us, but they did not register their first hit on the ship until about 0845, when six sailors were wounded by fragments of an enemy shell which struck a 5-inch mount aft. One of the men died about an hour later.

At 0940 attention was drawn to one of our cruisers about three or four miles north of us. She appeared to be hit amidships and a big fire could be seen burning in her well-deck from which rose a considerable amount of smoke. Despite this raging fire amidship, the cruiser was hotly engaging enemy shore batteries with her fore and aft turrets—an inspiring sight.

Just after this interlude an incident occurred which will probably always be remembered as the central event of the whole day. A procession of gunboats, and a number of small craft, preceded by minesweepers, moved slowly with care very close to the beaches on the southeast coast. Their mission was to reconnoiter and eliminate obstacles that might impede the landing of the assault troops.

As the vessels probed the island at close quarters the Japanese shore batteries suddenly opened up at almost point blank range and they found themselves under a violent and accurate fire. The water about them was being torn up by the hail of projectiles. Hits on the vessels multiplied. There were casualties. One gunboat was sunk and another was set afire. The gunboats returned the fire, but the odds in such a duel were in favor of the shore batteries, so that they had to withdraw.

Three of these gunboats came alongside the *Tennessee* and all their wounded were brought on board and accommodated in sick bay, and then our sail-maker furnished them with heavy canvas to wrap their dead for burial at sea. This was about 1145.

The remainder of the day was uneventful.

THE AMERICAN warships and planes continued the bombardment of Iwo Jima on 18 February 1945 in preparation for Marines landing on the morrow. Again the *Tennessee's* main battery was brought to bear on the slopes of Mt Suribachi while the secondary battery hammered away at concrete casemated artillery positions on the high ground sited to the right flank overlooking the landing beach and beach approaches. It was carried out at ranges of 2,200 to 6,000 yards, during which the Marine 40mm battery found targets on cliffs flanking north end of the beach and in hulls of several Jap ships imbedded in sand near the shore.

Several large and small fires were started ashore. There was a spectacular explosion when hits were registered on a large ammunition dump which went up with a cascade of sparks and burned radiantly with intermittent explosions for several hours. The eastern side of the airfield was littered with wrecked Jap planes and looked like a junk yard. Area from the water's edge to the airfield was pockmarked by vast craters caused by American shells and bombs. Anti-aircraft and shore battery fire from the island was still encountered when the *Tennessee* retired for the night.

In the pre-dawn darkness of D-day or Monday, 19 February, 1945, the transports, tank landing ships, landing craft, and vessels of the V Amphibious Corps arrived off the east coast of Iwo Jima. At daybreak the transports halted about eight miles offshore and put their Higgins boats in the water. Then the troops were sent over the side into the boats and the landing boats circled, circled, circled near the transports, waiting for the signal to make the run for the line of departure.

The tank landing ships detached themselves from the transports and moved up about three miles from the shore where they opened their wide bows and disgorged a host of amphibious landing vehicles carrying the assault troops.

Meanwhile, along with other battleships, cruisers and destroyers, the *Tennessee* had taken up her position several thousand yards offshore to deliver the preparatory bombardment for the landing. The bombardment commenced at about 0645, and followed a familiar pattern. Starting along the beaches the big guns ranged far and wide pouring shells into the slopes and heights which presumably concealed emplacements. For more than two hours the landing area took an awful going over. Fighter planes and bombers joined in the attack.

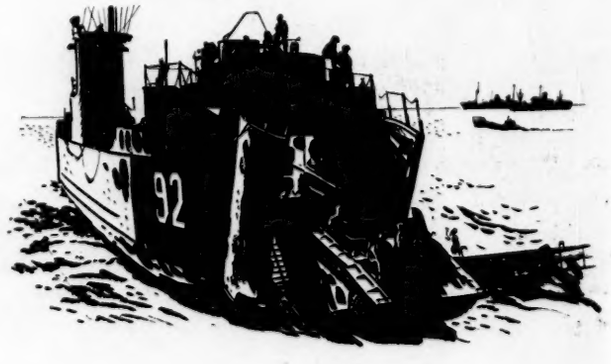
While the bombardment was at its peak the leading wave of amphibious vehicles had taken station about 200 yards to the seaward of the warships. Behind them the rest of the amphibious vehicles followed by the Higgins boats proceeded to form in parallel lines. In van was an escort vessel which directed the movement by means of a loud-speaker. The speaker blared, "Attention, *Tennessee*. You are on the line of departure." The ship at this time was lying broadside to the island, her starboard side engaged. An unofficial voice floated across from our quarter-deck, "What do you expect us to do? Push this big crate sideways?"

About 0835 the first wave of amphibious vehicles shoved off on their long trip to the beach. The rest of the assault waves followed in lines timed down to the second.

Then every warship on the bombardment line increased the tempo of its shelling and bombers dropped load after load of high explosives on enemy prepared positions facing the beach. The noise was incredible. At the same time a dozen gunboats moved in to fire numerous salvos of rockets into strong-points at very close range. Then fast planes laid a smokescreen behind the beach to block off the Jap's view. Very soon the shoreline and whole side of Mt Suribachi were completely obscured by flame and smoke.

The *Tennessee* was stationed on the left flank of the bombardment line, directly opposite Mt Suribachi, and under 3,000 yards from the shore line in which position it was our special duty to maintain neutralization of Suribachi.

The hundreds of landing craft came up on our port side in a score of boat waves, each some 80 boats 25 yards interval apart, disposed at distances of about 300 yards between waves. Then, they shaped a course which



passed the *Tennessee's* stern or bow—some passing the bow and some the stern. They cased-in so close aboard we felt as though we could reach out on either side of the ship and touch them.

Soon the expanse of water between the warships and the island was filled with a procession of landing craft churning shoreward. When the leading wave was about 300 yards from the beach the warships lifted their fire inland, and our fighter planes commenced strafing the landing area.

During the final approach to the beach there was light mortar and artillery opposition, but the first waves got in almost untouched. The initial landings were effected at 0859 on the beach stretching approximately 3,500 yards north from Mt Suribachi—the 5th Marine Division on the left near the volcano, the 4th Marine Division on the right near the high rocky cliffs at the north end of the beach.

On the beach, the first wave of troops quickly established a line behind the water-cut terrace at the water's edge. The terrace, five or six feet high, and about 25 feet from the shore offered cover. Inland from the terrace the beach rose gradually to a central plateau where the island's biggest airfield is located, and this airstrip was the initial objective.

Within a few minutes after the landing small groups of Marines could be seen advancing up the open slopes east of the airfield, burning out pillboxes with flame throwers. Machine guns rattled from the high ground. The softening up of the island by shells and bombs had by no means eliminated the numerous pillboxes, trenches, rifle pits, and machine gun positions which defended the routes inland from the beaches. Three of our tanks

arrived on the scene to assist in dislodging the Japs from their pillboxes and other strong points.

Meanwhile the first contingent of assault troops pushed up the slopes of black volcanic sand, now under shell and mortar fire from the Japanese, and disappeared over the skyline at the southeast end of the airfield, where they established a defense on the 0-1 line designated in the operation order. After this objective had been reached by the assault troops, larger units that had been crouched behind the terrace on the beachhead waiting to advance, started inland towards the airfield.

But as the second assault units began moving across the open space, resistance stiffened. The Japs poured mortar, rocket, and artillery fire on the entire area between the water's edge and the airfield. This fire was murderous. The range of every object on the beach had been "zeroed in" by the Japs in advance of D-day. This hostile fire was coming from Mt Suribachi on the left and the northern plateau on the right. The "rolling barrage" from the *Tennessee's* guns was immediately discontinued and our firing was shifted to the caves along the beach at the foot of Mt Suribachi and to the enemy batteries on the north flank.

Jap mortars erupted in the groups of men along the shore and among the thin lines of Marines edging up the sandy incline toward the airfield, and they suffered casualties. An enemy battery was belching death straight down the length of the beach. A land mine exploded now and then, knocking out a tank or amphibious tractor. A tank was just starting to thread its way between the beach and the airfield when it was knocked out by a Jap shell. Other tanks bogged down and tipped half over in the soft volcanic sand where they became helpless targets of Jap gunners.

PUFFS OF SMOKE and dust rose from mortar blasts creeping up and down the beach, while offshore shells splashed among the boats. Landing craft were blown up in the water. The beach was littered with our dead and wounded and with our wrecked tanks, tractors and landing craft. Overhead the *Tennessee's* spotting plane was shot down by gunfire. The projectile cut off the plane's tail and it crashed into the water off Tachiwa Point.

In spite of enemy fire our landing craft got more men, more guns, more tanks ashore, navigating between the shell and mortar geysers. Supplies and equipment were landed. Meanwhile our assault forces continued to move from the beach, through the deadly hail of enemy fire, to the airfield, and the story of the Battle for Iwo Jima which followed is now familiar to every American.

US MC

# Ecole Superieure De Guerre

IT IS AN ACCEPTED FACT THAT PARIS IS A CITY RICH in beauty and in history. It is equally an accepted fact that one of its most beautiful and historic views is seen from the Pont d'Iena. Across the Seine, beyond this broad span, memento of Napoleonic days, there first appears the famed Eiffel Tower. Framed in the graceful arches of its base, at the far end of the carefully tended lawns of the Champ de Mars, stand the gray stone buildings of the Ecole Militaire. Here, behind its high walls, the young nobility of Louis XV once learned some rudiments of war. Here too cadet "Napoleone Buonaparte" spent his 16th year. Today these same walls, bullet scarred in the recent liberation, enclose a complex of schools devoted to the advancement of military knowledge.

France is an old country. As such, its traditional institutions are often located in sites which have traditions of their own. With the passage of time, these traditions merge to the point where one can no longer be divorced from the other. It is thus that the Ecole Superieure de Guerre, located since 1878 in the buildings of Ecole Militaire, has become a part of the traditions of that place. The Ecole Militaire itself owes its existence to the persistent efforts of the financier Paris-Duverney. The elaborate plan for a military school which his brother Antoine-Paris had conceived 25 years before finally bore fruit, in a modified form, in 1751. On the 13th of January of that year, Louis XV signed the "decree of establishment." Thus was started the school designed to furnish France with an officer corps drawn from the impoverished sons of noblemen who had rendered service to the crown.

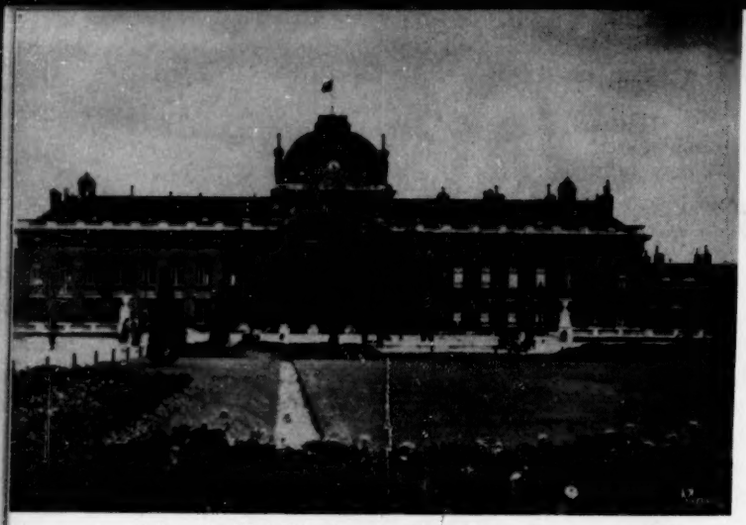
Basically, the approved plan called for a school capable of housing 500 cadets together with a large and varied staff. In the first recommendation to Agne-Jacques Gabriel, royal architect, it was suggested that the school occupy several buildings because "one cannot seek, in too emphatic a manner, to maintain a purity of air in order to form proper temperament, proper spirits, as well as good hearts." However, it soon was apparent that Gabriel had exceeded the limits of the Treasury, because of his first drawings Paris-Duverney was moved to write, "It concerns us less to raise an edifice to the glory of the king, than to build one which will be of service to the state." Six years after construction had started it was necessary to organize a lottery by royal decree in order to raise the additional funds required for the continuation of the project. By 1759 sufficient progress had been made to permit the Ecole Royale Militaire, as it was then called, to open its doors to young boys with the proper qualifications. In passing it is interesting to note that among the qualifications for admittance,, it was necessary to prove, to the satisfaction of a board, four generations of nobility on the father's side. Although this was a school intended for the training of boys from the age of eight to 18 for military careers, the curriculum included elementary tactics as its only military subject, and this was soon abandoned.

By 1771 the project had cost the government four and one half million livres. The training provided was not of a military nature, in fact regular civil schools of that day were giving similar instruction. Above and beyond this serious deficiency, the funds intended for 500 cadets were being used for only half that number. It was only a matter of time before this situation would invite critical attention. The Comte de Saint-Germain summarized the state of affairs in these words, "All military institutions should have as their only goals, usefulness and the greatest possible economy . . . . Since Louis XIV, a prince who had a grand and noble spirit, all institutions and establishments lean more towards ostentation than to utility, and rarely have reason and economy been considered. The purpose of the Ecole Militaire is to raise impoverished gentlemen and make them lieutenants of infantry. Education should always be based on the station that a man will occupy in a society; it is thus only necessary to form in them an honest heart, a serene spirit and a strong vigorous body; to teach them to read, to write, some arithmetic and mathematics, geography, and the languages of countries neighboring France. Instead of this we have an establishment which seems to be designed to raise princes."

In 1776 the school closed. The students were distributed among several provincial schools and the allocated funds were divided among these institutions. However, towards the end of the following year the Ecole Militaire reopened its officer training program with six meritorious cadets drawn from the provincial schools. In the next 10 years 594 cadets were trained in a curriculum somewhat more military than its predecessor. Of these

**Looking from the Palais de Cahillot across the Pont d'Iena. The Ecole Militaire appears in the background, under the lower arch of the Eiffel Tower.**

*By LtCol Victor J. Croizat*



**The Ecole Militaire, looking from Champ de Mars.**

594 cadets, two became Marshals of France, 39 became Generals, and one became Emperor.

In 1787 the Ecole Militaire began a long period of academic dormancy. Initially its new career included service as a hospital for the city of Paris. The following year it was used to store wheat, with temporary windmills being added to make flour. Another year saw the tailor for the Guarde National install his shops. Then, the French General Staff passed through as briefly as the revolutionary cavalry. In 1792 the mob of Paris, in search of weapons, damaged some buildings and destroyed the symbols of royalty. Napoleon came back in 1795 to establish his headquarters, and after his departure various troop units were stationed there through the years. In 1818 a stirring occurred when the Ecole Militaire momentarily reverted to a school. But this was only an ephemeral episode in its role of barracks. Thus Paris-Duverney's vision of a great military school answering the need for young trained officers never fully materialized. From its opening in 1759 to its academic renaissance in 1878 the Ecole Militaire lived up to its name for only a brief 10 years. Although the early history of the Ecole Militaire reveals only slight adherence to its intended function of making young boys into officers, it became a true military school when the Ecole Superieure de Guerre entered its doors in 1878.

AT THE END of the War of 1870 the French government realized the need for an institution which would provide officers with advanced military training and would at the same time provide a background of studies necessary in the establishment of a doctrine of war. In reply to this twofold need, the Ecole Superieure Militaire was established in 1876. Initially this institute was housed partially in the Invalides and partially in neighboring buildings. In 1878 its name was changed to the Ecole Superieure de Guerre and it was moved to the Ecole Militaire. From its inception through to 1914 the Ecole Superieure de Guerre functioned without interruption. Its studies on the campaigns of South Africa, the Balkans, and Manchuria had permitted a synthesis of a doctrine of war. Its officers had benefited from a form of training which was characterized as "the development of logical thought processes." It developed leaders as well as staff officers, and furnished France with the great names of the first Great War.

Enriched by the experiences of four hard years of war, the Ecole Superieure de Guerre, in 1919, once again resumed its duties. In 1921 the French High Command issued a manual entitled "Instructions sur l'Emploi Tactiques des Grandes Unités."[1] This manual was a doctrine of war and was naturally based upon the lessons of World War I. By order, this doctrine became the limiting framework upon which the Ecole Superieure de Guerre was to base its instruction. In 1936 a Board was convened to study this manual and make such changes as were necessary in the light of the then existing technical improvements. On the front of the edition of that year appears the statement that in spite of technical advances, the basic principles enumerated in 1921 were still valid. Thus in the 20 years between the Great Wars, the Ecole Superieure de Guerre was forced to limit the imagination and creative spirit of its instructors and students to the confines of a fixed doctrine established and approved by the High Command. Yet, in spite of this "official" rigidity, many officers spoke out in prophetic terms of what the future had in store. As early as 1927 Gen Duffour ended his course in strategy with an analysis of the possibilities that aviation held for land warfare. He drew, in broad lines, the picture of the tank breakthrough, and foresaw the consequences of deep armored penetrations in an enemy rear. By 1935 others had already emphasized the fact that in a future war, victory would come to he who first would exploit the plane-tank combination.

In looking back over those turbulent years it cannot be assumed that the Ecole Superieure de Guerre wasted all its efforts. Even though the doctrine of 1936 was fundamentally the doctrine of 1921, there was much to be found in it that was of value. A good portion of this doctrine was still valid in the recent war. The offensive was considered as the only means toward victory and the general instructions were generally sound. Recognition of the value of the airplane and the tank was evident, but the full appreciation of this combination and the necessary emphasis was lacking. It wasn't so much a question of the fact that the doctrine was all or even partially wrong, as it was the fact that not enough was included.

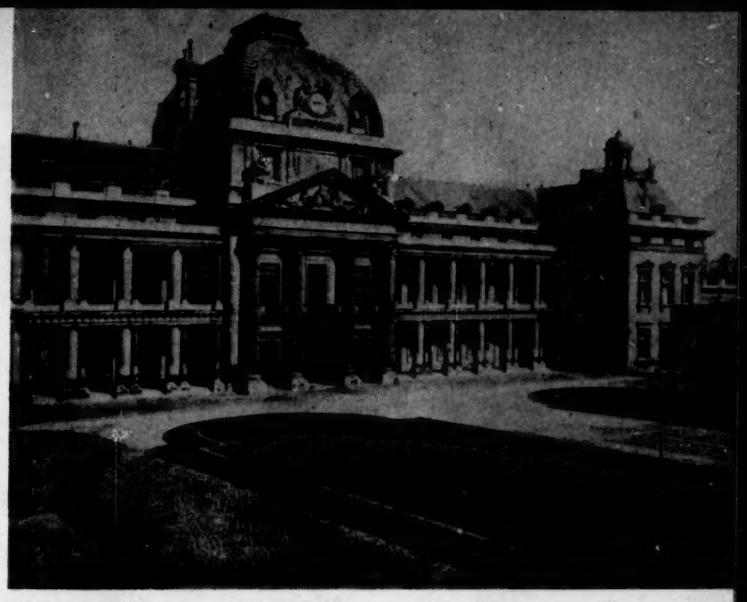
The start of World War II marked the end of the 61st

[1] "Instructions on the Tactical Employment of Large Units" (A "large unit" in the French Army is a unit of divisional or greater size).

"promotion."[2] From 1940 to 1945 the Ecole Militaire functioned as administrative offices for the German Army of Occupation. During this period of low fortunes, the French organized in North Africa a junior officers' staff school called the Ecole d'Etat Major. In 1945 this school moved to the Ecole Militaire. At this same time the Minister of War realized that one of the important problems in the reorganization of the French Army was the problem of higher military education. The solution to this problem was to be sought in an institute whose goals he defined in these general terms—to prepare officers for high level duties on staffs of large units; to provide a trained group of officers from among whom would be selected the future High Command; to form leaders capable of commanding large units of mixed arms; and last, but emphatically not least, to establish, evolve and keep up to date the doctrines which it was to teach. In 1949 the Ecole Superieure de Guerre was recreated and dedicated to these goals. The command of this new school and the Ecole d'Etat Major were vested in MajGen Bertrand. Thus under one capable commander began the operation of the two schools which are complementary to each other.

THE TASK facing Gen Bertrand and his staff was a heavy responsibility. Recognizing the need to build anew, the General stated, "If in fact this conflict (World War II) has not nullified the great principles which were the basis of the philosophy of war, it has rudely shaken the greatest portions of the ideas on which were erected the procedures for combat." Significantly enough the new class to enter the Ecole Superieure de Guerre in 1949 was called the First Promotion; the old slate had been wiped clean.

In its three years of operation the Ecole Superieure de Guerre has successfully established a comprehensive program based on its mission. In the first year of its two year course, there are two major goals sought. One is to develop in the officer a familiarity with large units of division, corps, and army strength. This familiarity is obtained through some lectures but primarily by map problems which cover the possibilities of employment in different situations and on varied terrain. It must be emphasized that such problems are worked out in small groups of a dozen officers and that there are no "school solutions." The problems in question are studied in detail and the opinions of the students are subject to the critical cross-examination of their colleagues and group instructors. The second goal of the first year is to provide a background of information on current developments in technical subjects; to recall certain periods of history; and to furnish data which has a fundamental military application in the fields of geography, law, economics, political science, and sociology. This type of instruction is usually presented by civilian authorities on the various subjects. In the second year of the course, officers of the army, navy and air force pursue, in common, studies involving combined operations.



**Cours d'Honneur, Ecole Militaire. Another view of main central buildings. Advanced schools for naval and air officers combine with Ecole Superieure de Guerre to form the complex of the Ecole Militaire.**

The "promotions" consist of 40 French officers of field grade. A few reserve officers performing civilian duties in government posts, as well as a number of foreign officers are invited to attend. These latter do not participate in the second year of instruction. French officers are admitted on the basis of exhaustive competitive examinations. Some two years of preliminary studies qualify about 250 of them for these examinations; only 40 are accepted. The officer entering must have a wealth of experience and technical knowledge. This provides the solid background necessary for his advanced studies.

Advanced schools for naval and air officers combine with the Ecole Superieure de Guerre to form the complex of the Ecole Militaire. The juxtaposition of the army, navy and air schools in the same area is a significant fact which indicates the acceptance of the idea of the interdependence of the combined services. For the present there is no overall command of these schools. The respective schools come under the jurisdiction of their proper ministry. However, it remains the hope of many officers that the day will come when the Ecole Militaire will function under unified command. Such an Ecole Militaire will insure, to a greater degree than already evident, the mutual understanding between services which is an essential element of a sound military establishment.

US MC

[2]Classes at the Ecole Superieure de Guerre are called promotions.

FSCC
ANOTHER EM

*The Fire Support Coordination Center is a landing force agency which coordinates naval gunfire, artillery, and air in support of landing operations.*

# M PIRE ?

RECENT EVENTS WOULD SEEM TO INDICATE THAT THE Fire Support Coordination Center, well known to Marines by the short title "FSCC", has finally come of age. In fact, it may well be outgrowing itself.

The initial appearance of the FSCC, *as an entity*, in our new wartime T/Os is prime indication of increased stature. Earmarked for the FSCC are some three officers and five enlisted, the majority of whom are carried in the FSCC Section of the artillery regiment—a significant fact in itself. This small figure may seem no bigger than a man's hand, but when we consider that the remainder of his body is drawn proportionally from other T/O organizations, the total number of personnel involved becomes rather sizeable.

While there is no indication in the new T/E as to what equipment will be employed to furnish the FSCC,

**By Maj Henry H. Reichner, Jr.**

at least one Marine division utilizes, as a basis for its FSCC installation, a warmed-over AAA communication center—the AN/TTQ, consisting of some 28 loads, weighing over four tons, and occupying some 400-odd cubic feet of shipping space. This will no doubt do until something bigger and better comes along.

Coupled with the above, and even more indicative of increased emphasis on the FSCC is the fact that Marine Corps Schools is now, for the first time, giving the fire support coordinator billing as a special staff officer in his own right.

This increasing emphasis on the coordination aspects of firepower (to the possible detriment of the delivery of that commodity) has resulted in a new and almost overpowering FSCC. Elaborate communications, large storage tents, electric lights, and yes, even a hotplate, characterize the physical installation. Manning the numerous tables, desks, telephones, and radio remotes, is a horde of assorted officers and enlisted men comprising the air, artillery, naval gunfire, target information, and in some cases, the anti-mechanized sections. The artillery officer —omniscient in all fire support matters—wields the baton and acts as coordinator/overseer of the entire FSCC. The overall picture somewhat resembles a small version of the Chicago grain pit during a sudden drop in wheat futures. A far call from its predecessor, this new organization has blossomed out like the Erie Railroad under Commodore Vanderbilt.

This sudden growth may well result in a material change of status insofar as the roles of many general and special staff officers are concerned. In fact—if the trend continues—it is not beyond the realm of possibility that the G-2 will become simply the staff target information officer, the air and naval gunfire officers will become assistant artillery officers (as they already are envisaged in current Army doctrine), and the G-3 will be able to shut up shop by transferring his remaining functions to the FSCC.

In short, the tail will be wagging the dog.

A noticeable example of the effect of this trend occurred during a recent command post exercise when the G-3 actually did secure operations for the night, leaving the FSCC to handle such problems as came up. The ability of this fire support agency to handle those problems, however, did not appear to be exceptional. But the mere fact that such problems were taken care of in the FSCC led one officer to state that all combat operations of a Marine Division could and should be run from the FSCC.

Another example which stems from this kind of thinking is illustrated by the almost sacred treatment that the FSCC normally receives on board AGCs. More than ample space is given to "coordinating agencies"—to the virtual exclusion of the operating agencies. The Joint Operations Room is becoming a hodgepodge of sidewalk superintendents who further complicate the already ex-

tensive and complex *operating* processes required to obtain and control the employment of naval gunfire and air.

What is the reason for all this sudden growth?

Is the Fire Support Coordination Center burgeoning into another unwieldy empire? Are we becoming hopelessly enmeshed in a multitude of unnecessary details as we make a complicated, magic ritual of fire support? Is the FSCC *as presently constituted* really necessary?

THESE and many similar questions frequently arise in the minds of some who give close study to this new, fashionable, and untried organization which has sprung up within the Marine division and in our wartime amphibious corps. The answers affect all hands from the commander down to the front line rifleman.

But before we discuss the FSCC of today and tomorrow, let's glance backward and see how it came into its present estate.

As originally conceived, the Fire Support Coordination Center was not provided for in the tables of organization, but consisted of naval gunfire, air, artillery, and communications personnel from headquarters elements of a corps or division. This concept was an outgrowth of actual combat experience, in which the air, artillery, and naval gunfire officers mainly concerned themselves with the operation of their respective fire support machinery and agencies. Informal coordination of fires was attained by looking over the other fellow's shoulder, so to speak. The installation itself was simple, with relatively few staff and procedural problems interfering with the delivery of firepower.

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ED: *The Commandant of the Marine Corps in serial letter MC-1156306 dated 18 January 1950 laid down a concept for Fire Support Coordination Centers as well as the personnel allowances for peace and war.*

What has happened to that small, simple, organization?

As far as the Marine Corps was concerned, the first actual instances of coordination of fires of the major supporting arms occurred during the later stages of the Guadalcanal campaign when such naval gunfire support as was available was employed to complement artillery by handling coastal targets out of range, or in defilade from that arm. This coordination was effected by the simple expedient—rather reminiscent of the British method—of sending Marine officers out on fire support ships to point out those targets which the land-based artillery was unable to handle. In these cases, the problems of coordination, if any, were resolved in the planning stages rather than in the operating period.

At Kwajalein, in early 1944, it was evident that some type of air-ground coordination was needed in order to prevent friendly planes from flying into naval gunfire trajectories or artillery barrages. This resulted in coordinating the scheduling of air strikes, during which artillery and naval gunfire would hold fire.

At Saipan, later in the year, thought was devoted by G-3 officers of the V Amphibious Corps to a Supporting Arms Center to be organized as a *part of the G-3 section.* This organization was conceived as little more than an informal get-together of the various supporting arms representatives. Experience during the Saipan phase led to provision for rather complete planning coordination prior to the Tinian operation, in the preliminary bombardment of which, artillery was allocated target responsibility for missions within range of neighboring Saipan, while naval gunfire and air attacked those more remote or inaccessible. This division of responsibility delineated a pattern destined to become standard.

The Guam operation saw the initiation of a target information and target analysis organization, both at the attack force level and within the III Amphibious Corps, but only as to preliminary bombardment matters.

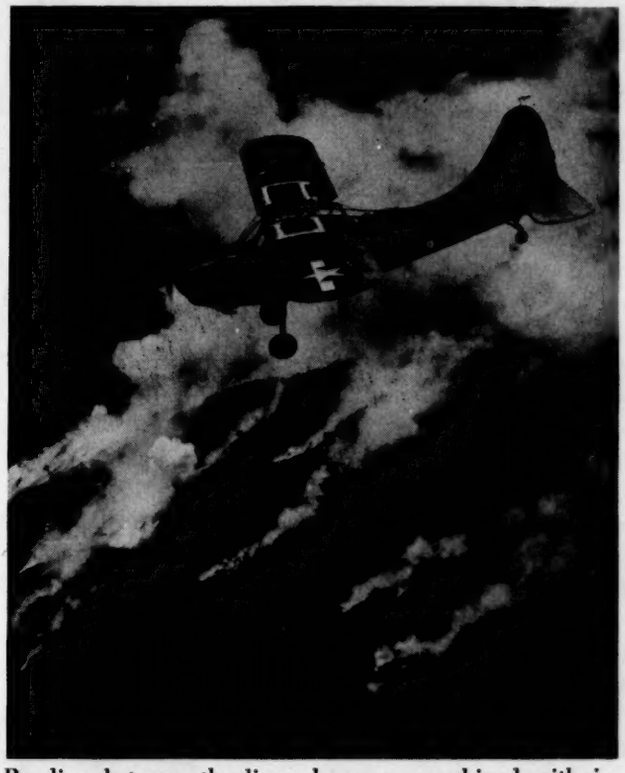
At Iwo Jima, in 1945, there was a further nod in the direction of the FSCC, without actually giving the organization a name. There existed, in actual fact, little or no formal coordination as such on the landing force level, but one division—the 3rd—had a spontaneously organized agency to handle matters of fire support coordination. This organization—which was never dignified by SOP or written charter—consisted of the air, artillery, and naval gunfire officers of the division, who set up shop together near the G-3 tent and effected coordination in an informal manner in order to prevent duplication of fires, particularly in the planning of prearranged fires.

IT WAS on Okinawa, last battle of the war, that the Tenth Army Artillery set up a prototype for the present-day FSCC.

And it bears emphasis here that this concept sprang, not from the amphibious experience of Marine units but from the preconceptions of an Army staff, hitherto inexperienced in amphibous warfare.

The Target Information Center (or "TIC") so created was taken away from the cognizance of the G-2, so to speak, and placed under artillery control. Artillery likewise assumed the coordination function, and supporting fires were to be integrated by an elaborate system of controls.

A glance at the written record would suggest that the operations of the TIC on Okinawa were an unqualified success—except for occasional complaints to the effect that air and naval gunfire took targets of opportunity under fire without consulting the artillery representative.



Reading between the lines, however, combined with interrogation of some of those present, seems to indicate that everything was not quite as rosy as would appear from a cursory surface examination of the record. Indications are that, as far as the III Amphibious Corps was concerned, the Target Information Center became a bottleneck, so choked up that it fell behind schedule and degenerated into a mere record-keeping agency for events long past. In consequence of this, the TIC coordinating machinery was not utilized in the manner planned. (Observation of a recent amphibious command post exercise indicated that the TIC still lags far behind the operating agencies. So far behind in this case, that it becomes largely an agency of historical record.)

Following the highly complimentary reports of the Okinawa show—prepared at long range and with the revisionism which usually characterizes action reports—the Sixth Army decided to adopt the same TIC setup for the

seizure of Kyushu. As a matter of fact, the Tenth Army doctrine was picked up *in toto* and made standard operating procedure for the entire Sixth Army. The V Amphibious Corps—lone Marine landing force in the Sixth Army—protested this decision on the grounds that coordination of supporting fires was a problem for the G-3, rather than the artilleryman. As a result of this protest, and in acknowledgment of the voice of experience, the V Amphibious Corps was permitted to establish the type of coordination agency that it felt was indicated. Consequently a Corps SOP was issued which placed the Supporting Arms Center under the G-3, and delimited its functions as planning and coordinating, but not an operating agency.

At this time, it might be well to examine some of the underlying reasons for the difference in fire support coordination doctrine which existed between the Sixth Army and the V Amphibious Corps. Basically, the difference was a result of different experience and different organization.

As one of Adm Turner's staff officers stated during the planning phase of the Kyushu operation, the Navy never was able to give the Marines all the gunfire support they could use, no matter how many ships were available, whereas on the other hand, they had to persuade Army organizations to use it at all. The same was true of close air support—with the notable exception of portions of the Philippines campaign. Because there was no troop organization for control of gunfire support in Army units, those units had to fall back on their artillery organization to handle naval gunfire matters. As a result, the full potential of naval gunfire was never realized, because there was no real appreciation of its capabilities. The fact that artillery controlled naval gunfire and air support as far as Sixth Army SOP was concerned, was merely due to the fact that there was nobody else to control those fire support means.

Subsequent to cessation of hostilities, in 1946, Fleet Marine Force, Pacific initiated a lengthy study of the coordination problem with a view to digesting the lessons of the war. The result was Fleet Marine Force, Pacific SOP 3-10, which outlined methods and concepts of fire support coordination to be used in the future. This SOP emphasized the coequal special staff status of the air, artillery, and naval gunfire officers. It did not envisage the FSCC as a command echelon at all, but rather as a function of the G-3 section. Informal coordination on all levels was emphasized. Most important, this SOP recognized the fact that the greater amount of coordination would always be required in the *planning of pre-arranged fires* rather than in the execution. Prompt delivery of fires was, if necessary, to supersede meticulous coordination. This FMF concept of fire support coordination reflected accurately the lessons and experience of Marine operations.

In rather striking, diametric opposition to the FMF's philosophy regarding these matters, Army concepts of fire support coordination at the close of the war placed

responsibility for all coordination—and indeed of all fire support operations—with the artillery. Supporting arms representatives (air and naval gunfire) were to be present only as liaison officers at the artillery fire direction center—rather than as special staff officers on the commander's staff. This Army concept has not changed since that time, and is generally urged and propagated in Army schools and training literature.

That, briefly, is the past history of the FSCC.

Just what, then, is our present concept, how does it compare with the Army concept, and what future trends can we expect insofar as FSCC is concerned?

The FSCC currently envisaged in the Marine Corps consists of air, artillery, naval gunfire, and target information sections. The artillery officer acts as coordinator and oversees the entire organization. At the present time, air and naval gunfire officers still retain the status of special staff officers on the commander's staff. The problem

lies, therefore, not with the organization, but rather with the generally accepted manner in which the FSCC is run. The increasing tendency, it seems, is for the artillery officer to bypass the G-3 on matters of firepower and report directly to the commanding general. The fact that the FSCC is a big, new, and elaborate organization tends to emphasize and separate the problems of firepower to the detriment of the problems of maneuver (e.g. of infantry and armor).

As far as comparisons are concerned, it seems evident that the Marine Corps system is coming closely to parallel that of the Army, with the following important exceptions.

First, although the Marine artillery officer is the coordinator, the FSCC itself is located at the division or corps command post (the Army concept utilizes the artillery fire direction center as coordinating agency). Second, the Marine air and naval gunfire officers have the status of special staff officers (the Army concept dismisses them, essentially, as liaison or assistant artillery officers at the artillery fire direction center). Third, the coordination on lower levels within the Marine division is still an informal process which generally results in rapid delivery of much fire on targets (the Army doctrine requires spotters to contact artillery battalion fire direction centers to obtain fires from a direct support ship rather than by direct contact with the ship itself).

The fact that the artillery fire direction center is not within the FSCC permits the artilleryman coordinator to run the show with a great many delegated powers—depending upon the commanding general—while his well-organized artillery operating agency (the FDC) enjoys an opportunity to carry on its business without interruption. The air and naval gunfire officers, on the other hand, must both operate and coordinate at the FSCC, where their workaday, unilateral business can become badly tangled with "coordination."

To PREDICT future aberrations is to peer into the crystal ball, but our current tendencies and practices indicate that we are slowly committing ourselves to the theory that all firepower should move away from division or corps headquarters and be controlled at the artillery fire direction center. With acceptance of this action, it follows that division or corps air and naval gunfire officers will disappear and become assistants to the artillery commander, in a liaison capacity. In brief, despite a reversal of thought at the end of the war, we are moving tacitly toward the Army concept of coordination and toward one which the Marine Corps itself discarded prior to Tarawa, a concept which will result in further separation of firepower from maneuver.

By this time, the reader will have sensed that several questions are bound to arise sooner or later if present trends in the development of the FSCC continue. It is obvious that the roles of many officers will be affected.

*How will the commander be affected?*

"G-3, what fires have been recommended to support this scheme of maneuver?"

"Well, General, since the FSCC has moved away from the CP, we have trouble maintaining liaison with them. In consequence, we haven't yet gotten their fire plans."

An exaggerated situation? Undoubtedly the commander will lose the present close touch he has with his various sources of fire support, if the air and naval gunfire officers are placed within the artillery command. For all practical purposes, he will be deprived of the advice of those officers. The departure of the FSCC from the division CP will increase the separation of the commander from his firepower.

*How is the G-2 to be affected?*

"Say G-2, what enemy activity is holding up the —— Marines?"

"I don't know Colonel, you'll have to get that dope from the FSCC; all my men are over there."

The installation of a large target information agency within the FSCC is a strain on the G-2 section. Either the activities of that section will have to be curtailed in order to provide a separate intelligence agency for the FSCC, or the section will of a necessity move into closer proximity to the FSCC in order to provide target information with a limited loss of personnel. Ultimately, perhaps, the G-2 will become little more than a staff target information officer.

*How is G-3 affected?*

"G-3, you're going to have a little more work on your hands, the fire support coordinator just refused to approve the scheme of maneuver you submitted," said the Chief of Staff.

"Colonel, I might just as well shut up shop and move over to the FSCC and let them work it out," was the retort.

As he loses direct control over firepower, the G-3 will discover that his job has been emasculated. His sole interest will lie with the infantry, control of which—without close control of firepower—will become exceedingly difficult—and ineffective. His liaison problems with the FSCC are already a difficulty—removal of the installation to the artillery fire direction center will magnify the problem.

*How are the air and naval gunfire officers affected?*

"We can't possibly support that particular plan with air," stated the air officer, "but the fire support coordinator says we will. What do you think?

"I tried to recommend naval gunfire, but he wouldn't listen to me," answered the naval gunfire officer. "For all I'm accomplishing I might as well be back home."

Needless to say, the air and naval gunfire officers will no longer remain as special staff officers with direct access to the commander, despite the fact that they represent two very important, and sometimes unique sources of heavy firepower available to the landing force. Their knowledge of the capabilities and limitations and the technique of employment of their respective arms will no longer be available directly either to the commander or his G-3. This knowledge may well find itself disregarded

in the FDC, busy with its own proper (artillery) concerns.

*What becomes of the artillery officer?*

"Colonel, your FDC wants you on the telephone."

"Tell them to wait, sergeant, I've got to straighten out this air strike. The Tactical Air Director has it all fouled up."

Is the artillery officer going to become super-coordinator, qualified as an "expert" on air and naval gunfire matters as well as past master of the artillery? Can he operate air and naval gunfire support—all at the same time?

*Finally, how will this organization affect the front line troops?*

"Why can't I get that naval gunfire now? We really need it," said the company commander.

"Sorry skipper, but it must be coordinated," answered the batttalion three. "You'll just have to wait."

Is that company commander going to get a rapid and propitious application of bullets when and where he needs them? The answer is problematical. After all, the rifleman wants bullets, not a minuet staged between firepower agents under the supervision of the baton-wielding coordinator. Ritual coordination is bound to cause delays, delays that can be costly.

There is another facet worthy of mention. With increasing limitations placed upon troop space in the AGC, where are we going to find room for the train of coordinators? Will we sacrifice space for the operators, or will today's coordinators become the operators of tomorrow?

All these questions point squarely to another question. Just what is the proper *raison d'etre* of the FSCC? What does it accomplish, and is it wholly necessary?

IT IS FAIRLY obvious that we do need some sort of organization within our Fleet Marine Force units to provide for effective and economical use of our major supporting arms. The FSCC is the response to that need. However, the major problems of coordination normally exist during planning. Not only during the planning stage of an amphibious operation, but also during those periods when plans are being made for prearranged fires to support any given scheme of maneuver. Close cooperative action between the various fire support representatives is vitally necessary during that period.

On the other hand, imposition of further "coordination" during the operating period over plans which have already been "coordinated" during formulation, results in confusion and delays. Operating agents such as the air and naval gunfire officers should be free from undue interference during the execution phase. Such coordination as is necessary should be undertaken in an informal manner. The motto of the FSCC should be "*get fire on the target.*" With our present complicated setup, with all the procedural problems which result from that setup, we are beginning to lose sight of the man in the front lines.

Presently, we have at least two major courses of action left to us insofar as development of the FSCC is concerned. Variations may exist somewhere between the two.

First, development along the lines of the present trend may continue, resulting in further separation of the firepower agencies from the maneuver elements—the tanks and infantry. The FSCC may be taken over by the artillery elements and away from the G-3. Thus, the organization would become a command agency of the artillery rather than a function of the G-3. The commander and his G-3 will as a result lose their close contact with the supporting arms. Moreover, by this progressive separation of the commander from his firepower-resource, we leave him with unchanged heavy responsibility, but take away his means.

Second, the trend may be reversed. The FSCC can become more of an advisory and planning agency to the commander and G-3. This, of course, should result in closer integration of supporting fires with the scheme of maneuver. At the same time coordination functions could and must be accented in the planning phase to be soft-pedalled in the execution phase. Personnel and equipment requirements would be at a minimum. Informal rather than ritual coordination would result.

Which way are we going?

USMC

# Naval Battalion At Mariveles

**". . . Today we have encountered a new kind of enemy. They come walking into the front yelling 'Hey, Mac, where the hell are you?' They are completely without fear . . ." Thus read the diary found on the dead Jap. It referred to the reinforcements for Fidgety Frank's naval battalion**

THAT THE CAREER OF GENERAL OF THE ARMY Douglas MacArthur did not end in January, 1942 in a Japanese prisoner of war camp can very probably be attributed to the Naval Battalion at Mariveles. The story of this unit, neither naval nor a battalion, is told for three reasons: first, to demonstrate the importance of local security for all forces; second, to show how the seizure and maintenance of the initiative can serve the defender; last, and really the only reason, because all in all it is a pretty good yarn.

The summer and fall of 1941 saw the Philippines preparing for war. Squadrons of B-17s, a tank battalion, an AAA regiment, a fleet of submarines, and a large number of junior officers arrived from the states; the regular army units organized and trained cadres to activate the 10 divisions of the Philippine Army, dependents of military personnel were ordered back to the states and all civilians were advised by the State Department to evacuate. In spite of all this activity, no one took the Japanese threat seriously and the whole thing was looked on as a picnic. A picnic to everyone but Cmdr Francis J. Bridget, a naval aviator, whose back reminded one of a ramrod and whose waxed mustache seemed to bristle with boundless energy. He cracked the whip, told everyone to "get war conscious" and earned himself the nickname of "Fidgety Frank."

". . . Oke, Joe, you go now. I take over . . ."

The news of Pearl Harbor was received in the Philippines at about 0230, 8 December; the B-17s were destroyed on the ground and Cavite reduced to rubble and ashes on the 10th; and the Japanese landed in force at Lingayen Gulf on the 12th precipitating a mad scramble for Bataan and Corregidor. In spite of the news broadcasters who harped on the fact that Gen MacArthur had stated he could defend the Philippines with 10 divisions, omitting the General's qualifying phrase, "well equipped, well trained," it was only too well known that the Philippine Army's 10 divisions had existed only on paper prior to 8 December. An alarming percentage had no shoes or rifles. The picnic was over.

The only naval facilities remaining in the Philippines by the first of the year were at Mariveles. Here all the unattached naval personnel were congregated and Bridget lived up to his nickname. Mariveles, Fidgety Frank contended, had to have a force for local security. A landing on any of the bays to the South could quickly secure the high ground behind the naval station thus cutting the only supply road on Bataan and rendering the naval facilities untenable. (See map.) Besides it was doctrine that every commander must establish an all around defense of his own area. It was rumored on Corregidor that Cmdr Bridget made every man at Mariveles participate in a formation at colors and repeat the oath of allegiance to the flag.

No one at Mariveles paid any attention to Bridget and his ideas and after a few fruitless days he took a trip to Gen MacArthur's advance headquarters where he requested security forces for Mariveles. This headquarters told him that each unit was responsible for its own local security and put out an order designating sectors of responsibility. This order was just the wedge needed and the commander proceeded to use it.

On 15 January 1942 Bridget was ordered to form a naval battalion and given the mission of local security for Mariveles. He was authorized to use any naval per-

sonnel on Bataan who could be spared from other duties. His first act was to direct Battery "A," Third Battalion, Fourth Marines (two officers and 80 men) to leave Ordnance Headquarters, USAFFE,* where they had been performing guard duty, and move to Mariveles. This battery set up nine water-cooled machine guns for aerial defense of Mariveles that day. On 16 and 17 January about 65 bluejackets and one naval aviator (Lt(jg) Pew) were attached to the battery. This contingent was organized into two platoons, assigned marines as senior NCOs and instructors and given about three days' training in marksmanship, squad tactics and bayonet.

Battery "C," Third Battalion, Fourth Marines, same composition as "A," manned four 3" guns for air defense of Mariveles. On 18 and 19 January, Ensign Grundels and about 40 men reported to this battery and were given the same treatment as Pew and his men.

This force of storekeepers, torpedomen and supply personnel with their marine NCOs and instructors was the naval battalion. Bridget found two 2.95mm mountain artillery guns, some ammunition for the guns, Lt Perez, Philippine Army, and about a dozen Philippine Army enlisted. His battalion now had artillery.

During the night of 22-23 January, the Japanese executed a landing on Longaskawayan, Lapiay and Naiklec Points. At about 0800, three marines (air warning lookout on Mount Mauankis) saw members of this force and notified Bridget by phone, then evacuated.

Although the enemy was not in the sector of responsibility of Mariveles, Bridget telephoned Batteries "C" and "A" in that order, told them he had a report of Japanese in the vicinity of Pucot Hill and ordered them to investigate and secure Mauankis and Pucot. Next he scoured the naval station for able-bodied men, armed them and set up a command post. (See map.) Prior to leaving the naval station, he ordered Lt Bowers, USN, to continue "recruiting" and report to the CP at 1900 with the results.

1stLt Holdredge, USMC, battery commander of "C," sent Grundels with a platoon to Pucot, took a platoon himself to Longaskawayan and instructed 1stLt Simpson, USMC, to man the guns with the minimum necessary to fire and take the remainder to Naiklec.

1stLt Hogaboom, USMC, battery commander of "A," sent Pew with a platoon direct to Pucot and took a platoon into the hills back of Mariveles. He took Mauankis without oppisition, left a squad there to secure it, and proceeded toward Pucot intending to come up on it from the rear.

Grundels ran into a small group of Japanese on the southeastern slope of Pucot and engaged them. Both he and his senior NCO were wounded. Pew heard this firing, deployed and swept up the northwestern slope meet-

*United States Armed Forces in the Far East.

***By LtCol William F. Prickett***

ing very light resistance. Hogaboom also heard firing and deployed but only encountered Ensign Grundels' men firing into the jungle. They were disorganized and demoralized because of their wounded leaders. Hogaboom organized these men and ordered them to prepare Pucot for defense and pass the order on to Pew when he arrived. He then proceeded toward Lapiay. During the afternoon he made several contacts with small groups but was unable to pin them down for a fire fight. Toward dusk, he returned to Pucot and found that Simpson had joined Pew and Grundels there.

Simpson had proceeded to Naiklec and encountered nothing. He had reinforced the squad Hogaboom left on Mauankis by another squad and on hearing the firing around Pucot took his men there. Holdredge encountered nothing on Longaskawayan and when he heard the firing on Pucot, deployed his men on the ridge between Pucot and Mauankis and went to investigate.

The five officers compared notes on Pucot and decided they had accomplished their mission of investigating and securing Pucot and Mauankis. They laid plans for a defense of the ridge between the two mountains and Hogaboom and Holdredge went to battalion CP to report and receive instructions for the next day. They estimated the enemy strength to be about a platoon.

The combined recruiting of Bridget and Bowers had produced about 30 men. These were turned over to Holdredge to organize into an additional platoon. The next day Hogaboom and Pew would secure Lapiay; Holdredge, Grundels and the new platoon under PltSgt Clements, USMC, would secure Longaskawayan; and Lt Simpson would secure Naiklec.

Hogaboom decided to proceed to Latian Point, do a left flank and go east to Kinalalakan Bay thus securing

". . . Let's get the hell out of here . . ."

Lapiay. On the way to Latian, one small group of enemy was encountered but no shots were fired. After the flank movement, however, he met resistance which strengthened until he was pinned down. During the day he received 75mm fire several times. Late in the afternoon he withdrew to Pucot fighting a rear guard action along the way.

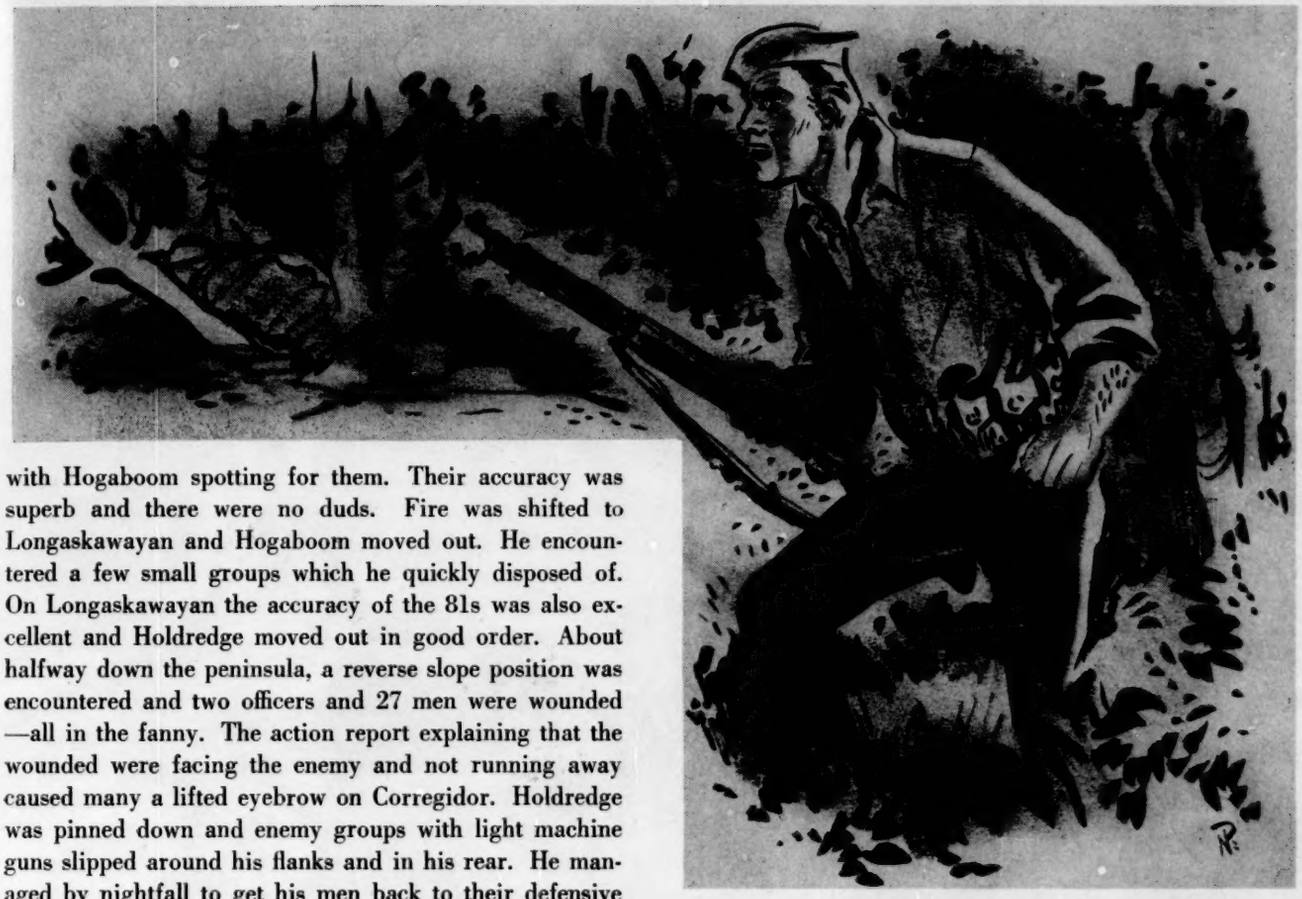
Simpson again encountered nothing although on several occasions his men "thought" they had seen individual Japs. Holdredge moved out in patrol formation and his point, consisting of a BARman, two riflemen, and himself (armed with a Tommy gun), found a light artillery battery in position. He personally placed each man and assigned him to an area target. The point opened with surprise fire at a range of 75 to 200 yards ripping the battery to pieces. The BARman suddenly jumped up and yelled "Let's get the hell out of here! This will really make them mad!" Holdredge realized that he had somehow gotten into the Japanese rear area and afraid he would be cut off, turned the patrol around. The firing had alerted the enemy and the patrol was attacked by small groups from all directions. Fortunately the attacks were piecemeal and he was able to repulse them all and at the same time continue to work back to Pucot-Mauankis ridge.

BY NIGHTFALL, all patrols had returned to their positions of the night before. This time the report to Battalion CP placed the enemy strength at a reinforced company. Help was requested of the Fourth Marines (beach defense, Corregidor) and a machine gun platoon with a mortar section attached, under 1stLt Peshek, was sent to Mariveles. Col W. T. Clement, USMC, requested and obtained permission to observe the action and advise Bridget. During the night the mortars set up in the saddle east of Pamatoc Bay and the machine guns were emplaced on Mauankis.

Orders for the following day were to shell the areas on Lapiay, where enemy had been contacted, then shift to Longaskawayan. Hogaboom and Pew would have another try at clearing Lapiay after the mortar fire lifted. Holdredge with the remainder of the men would take another crack at Longaskawayan with the mortars and machine guns in support.

A few wounded men had started to trickle into Mariveles. Sailors of all kinds, from seamen to chiefs, went by the sick bay to find out from a wounded man just where the fighting was taking place. Armed with this information, they proceeded to the armory to draw a rifle, cartridge belt, and ammunition, then took off to the hills. A diary found on a dead Jap had this entry: "Today we have encountered a new kind of enemy. They come walking into the front yelling 'Hey, Mac, where the hell are you'. They are completely without fear." By twos and three they joined the force that were already present.

Shortly after dawn on the 25th, the 81s opened up



". . . Hey, Mac, where the hell are you? . . ."

with Hogaboom spotting for them. Their accuracy was superb and there were no duds. Fire was shifted to Longaskawayan and Hogaboom moved out. He encountered a few small groups which he quickly disposed of. On Longaskawayan the accuracy of the 81s was also excellent and Holdredge moved out in good order. About halfway down the peninsula, a reverse slope position was encountered and two officers and 27 men were wounded —all in the fanny. The action report explaining that the wounded were facing the enemy and not running away caused many a lifted eyebrow on Corregidor. Holdredge was pinned down and enemy groups with light machine guns slipped around his flanks and in his rear. He managed by nightfall to get his men back to their defensive position on the ridge.

During the night, Perez and his 2.95s went into position on Mauankis, a battery of 75mm (wangled by Col Clement) was placed in support of the battalion, 12" mortars from Corregidor shelled Longaskawayan and the USS *Quail*, a tug, prepared to put to sea. On the 26th Lapiay and Nailec were to be patrolled lightly and the remainder of the troops reorganized into two companies. Mortar and artillery would work over Longaskawayan all day and on the 27th a coordinated attack would secure it.

AT DAWN on the 27th, the 75s, 81s, and 2.9s opened up from land and the USS *Quail* assisted with 3" fire from the sea. A rolling barrage was to precede the troops down to the sea. Just as the troops moved out, the 75s shifted their fire right on top of them and it took the better part of an hour to get this fire stopped. The troops again moved out but the enemy had used the hour to re-man his defenses and fill in the gaps caused by the original barrage. The attack soon stopped and again the enemy worked around to the flanks and rear with light machine guns. The order to retreat to the Mauankis-Pucot ridge was given and singly or in small groups the men worked their way back. All supporting fires were concentrated in front of the ridge and the Naval Battalion again settled in for the night.

About midnight, the men were amazed to feel a hand on their shoulders and hear whispered in their ears, "Oke, Joe, you go now. I take over." The First Battalion, 57th Infantry (Philippine Scouts) was relieving the Naval Battalion. As PltSgt Clements reported, "The little guy was suddenly there, where he came from, I'll never know."

The Scouts went into action the next day with the naval battalion in reserve. Three days later the affair was ended with the remaining Japs jumping over the cliffs into the sea. Captured documents were reported to set the enemy strength at seven officers and 294 enlisted plus attached artillery.

The naval battalion had prevented the closing of the only supply road on Bataan and the possible capture of Gen MacArthur, only five miles away, had seized the initiative and prevented the enemy from getting set for an attack (predestined to succeed) on the meager forces facing him, and had isolated the enemy on a small peninsula where the Scouts made short work of them.

That then is the story of the Naval Battalion, some 200 sailors, Marines and Philippinos. The supreme audacity of Bridget with a staff of one lieutenant and no radios or telephones in launching his "coordinated attacks" is amazing. USMC

# New Mortar Company

By Maj James H. Naylor

**Army used the 4.2" mortar during the last war and found it to be an excellent infantry support weapon.**

HOW WOULD YOU AS A REGIMENTAL COMMANDER like to have the firepower of three battalions of 105's at your beck and call at any time? This is, in effect, what every infantry regimental CO will have, for with the adoption of the "K-series" Tables of Organization by the Marine Corps, there has been added to the striking power of Marine infantry that potent weapon so staunchly recommended by LtCol Aplington in the September issue of the Marine Corps GAZETTE—the 4.2" mortar.

Let us look critically at the mortar company, examine its organization and equipment, and then determine to what extent we in the Marine Corps can adopt the doctrine set forth in FM 7-37 on the employment of a heavy mortar company. Since the peacetime organization, with its two rifle platoons in a rifle company and two rifle companies in an infantry battalion, is obviously designed to serve as a cadre which can be rapidly expanded to a balanced fighting outfit, we shall consider the new 4.2" mortar company as it will appear in the wartime Marine infantry regiment, with the personnel, the equipment, and the transportation it will have in combat.

Unlike the triangular organization of artillery units with three firing batteries or the 81mm mortar platoon with three sections, the mortar company has two platoons of four guns each, and, of course, a company headquarters. The heavy mortar company of the Army (now organic to their infantry regiment) has three 4-gun platoons, and it seems probable that the reduced size of the Marine company is due to the logistical problems inherent in amphibious operations. The difficulties of maintaining an ammunition supply for even an eight gun company are considerable, as we shall emphasize later.

It will be noted from the accompanying chart that company headquarters is comparatively large, for in addition to the housekeeping personnel,—the cooks, clerks, etc.,—sufficient personnel are included to organize a fire

**Firepower equivalent to that of three battalions of 105s will be readily available to every Marine infantry regimental commander, now that the K-Tables of Organization have been adopted. Source of this organic firepower is the new 4.2" mortar company**

direction center, establish accurate firing data by initial survey, and operate the necessarily extensive communication equipment in the company. The platoons, unlike the 81mm mortar platoons, are not subdivided into sections as it is not anticipated that anything less than a platoon will be given a particular mission. In fact, as with the 81s, the company should be used wherever possible as a unit to take advantage of the multiplied power of massed fires.

For transportation the company has four jeeps with trailers, two 2½-ton 6x6 trucks, a 1-ton cargo trailer, and a 300-gallon water trailer. If all the jeeps and cargo trailers are employed, one platoon can be displaced with 200-300 rounds of ammunition, depending on road conditions, as this figure is based on reasonable overloading. While it is realized that our amphibious mission imposes heavy restrictions on the quantity of motor transport that can be carried, it is our belief that the transportation in the 4.2" mortar company has been pared down to a point that seriously cripples its effectiveness. One more jeep for command purposes, preventing the company commander from being immobilized during the important period of displacement, and the substitution of another 1-ton cargo trailer for the water trailer would surely not add seriously to the shipping space and would help to reduce the ever-present problem of ammunition supply. For it must be remembered that all mortars have a very high rate of fire, (20 rounds per minute, rapid rate, for the 4.2,) a characteristic which enables the company to deliver 1360 pounds of high explosive on a given point in one minute's time! This is more explosive than can be fired by *three battalions* of 105mm howitzers in the same period, due to the higher rate of mortar fire and the much greater weight of explosive filling in the mortar shell. As can be easily appreciated, the high rate at which the mortar company can devour its ammunition creates almost insuperable supply problems and effectively limits the use of the weapon, as will be pointed out later. Incidentally, Headquarters Marine Corps has not as yet indicated what comprises a unit of fire for this weapon; the latest T/A indicate that it will be announced later. The Marine Corps Schools, for instructional purposes, from the best information available, are using 162 HE and 108 WP as a unit of fire for each mortar. Since this totals *thirty-seven tons* for the company, the magnitude of the supply problem can easily be seen.

Every unit in the infantry regiment now rates one light machine gun for every two jeeps and one .50 cal. machine gun for every two 2½ ton trucks. As a result, the 4.2" mortar company has two lights and one .50. It might be noted that in the peacetime tables of equipment, but not in the war tables, the company has *four* light machine guns although it has no organic transportation,—mystifying, to say the least. Certainly, if any guns are needed for the close-in protection of the company position, four guns would be a minimum. Likewise, in peacetime the company rates two 3.5" rocket launchers to provide a limited amount of antitank protection for the position, but, inexplicably, none are furnished for wartime use. Possibly the peacetime tables of equipment were compiled after the wartime tables and embodied changes which have not yet appeared as corrections to the war tables, because, in similar fashion, the company has more radios (though fewer operators) in peacetime than in war.

Let us see what the company has for communication equipment and how it might be employed. There are six SCR-300 radios (seven in peacetime) for control within the company: one with each forward observer, one at the FDC, and one at each platoon position. Although communication from the FDC to the gun positions would normally be made by wire, the radios would parallel the primary means of communication and enable the platoons to monitor the transmissions between the forward observers and the FDC. The other SCR-300 would be at the company CP on the regimental tactical net. The additional SCR-300 rated in the peacetime Tables would be used by the company commander since his place in combat is usually with the regimental commander. If the additional SCR-300 is not made available in the war tables, only one SCR-300 would be used at the gun position.

The three SCR-536 radios can be essentially utility sets to be employed as the need arises,—between the FDC and the gun position, between platoons, or between forward observers and front line units, to mention a few. Their use should be predetermined so that a suitable frequency can be assigned. The SCR-619 can be employed on the regimental auxiliary tactical net and, on its other

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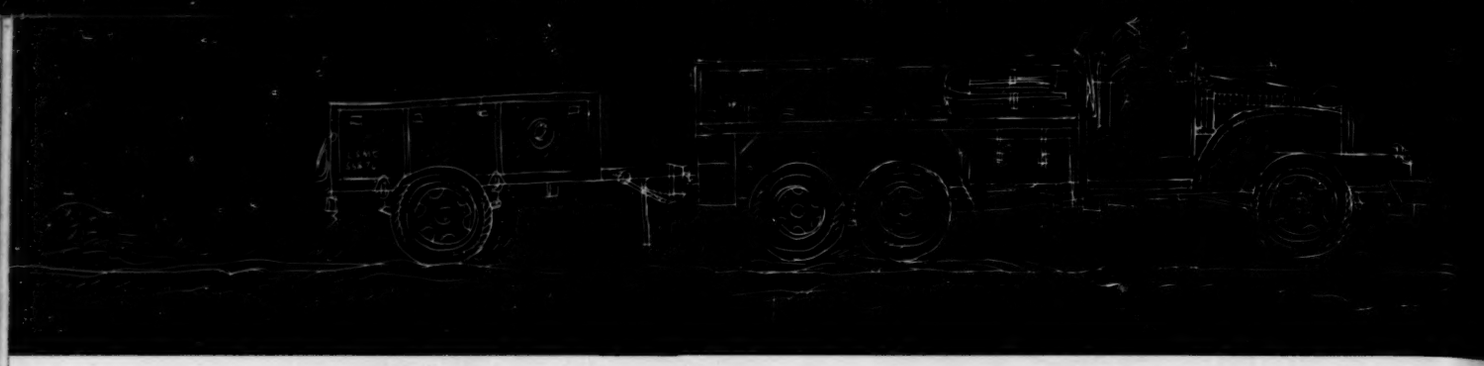
*Maj Naylor is an instructor in the Tactical Operations Group, Combined Arms Section, Marine Corps Schools, Quantico. This article is Maj Naylor's first for the* GAZETTE.



channel, be used on the net of the supporting artillery battalion. This will ease problems of coordination between these supporting weapons. The TBX-8 is, of course, on the regimental command net. A BD-71 switchboard with 10 EE-8 telephones is sufficient to permit a complete wire system within the company and to regiment, and three CE-11 reel sets can again insure unfailing communication between the guns and the FDC, paralleling the primary wire installations.

Before we investigate just how this new company may be employed, it might be well to review some of the characteristics of the weapon and consider its capabilities and limitations.

The 4.2″ mortar, M2, has a rifled bore, unlike the 81mm mortar, giving greater accuracy and range. It fires a 24½-lb HE shell 4400 yards or a 25½-lb WP shell 4250 yards. The high rate of fire has already been mentioned. The mortar weighs 335 lbs, over double the weight of the 81. It can, however, be moved for reasonably short distances on the handcarts carried in the company equipment. Because of its accuracy, rate of fire, ease of concealment, and the high ratio of explosive filler to the total weight of the shell, it is an excellent weapon for close support missions, and, as LtCol Aplington pointed out, for screening missions it is "the best possible weapon for the purpose."

The greatest limitation of the 4.2″ mortar is the restricted traverse of the present model, 125 mils right and left. A total traverse of 700 mils may be obtained by shifting the standard. Targets outside of this sector can only be engaged by moving the baseplate, a laborious process necessitating the removal of sandbags, prying the 175 lb baseplate loose from the firm position in which it has embedded itself, and then laying it in. The time this takes is directly proportional to the firmness of the soil—the softer the soil, the longer the process. Under ideal conditions the change can be made in as little as two minutes, but in soft soil, even with a new emplacement prepared, the shifting of the baseplate may take 15 minutes or longer. It can be seen that, if such is the case, the location of the gun position will be influenced by this limitation of the weapon, and that in order to cover a greater portion of the front without the cumbersome necessity for shifting baseplates, the mortars must be emplaced farther to the rear.

IMPROVED MODELS of the 4.2″ mortar are being tested which overcome this drawback, in that they have circular baseplates permitting 360° traverse. The experimental models have also succeeded in providing greatly increased range for the mortar. With the restrictions on traverse removed, it appears that the chief remaining restriction on the use of the weapon will be the amount of ammunition which can be supplied. This is indeed a considerable difficulty, for the rated capacity of the *organic* company transportation, (less the jeeps and jeep trailers which will be used to move the guns and part of the mortar squads), is only six tons—less than 44 rounds per mortar or barely two minutes firing at the rapid rate!

This overpowering and omnipresent problem of ammunition supply to the Marine 4.2″ mortar company is, by comparison, a negligible trifle to the heavy mortar company of the Army infantry regiment. Not having to contend with the logistics of amphibious assault, their mortar companies burgeon with transportation—10 jeeps, 16 ¾-ton weapons carriers, four 2½-ton trucks, and 30 trailers, plus five 2½-ton trucks in the heavy mortar section of the regimental service company. As a result, their doctrine for the employment of this weapon (FM 7-37, July 1949) cannot be adopted in one package by the Marine Corps. Differences in supporting motor transport equipment are too marked. The Army envisions a much wider use of the weapon for close support of front line units, particularly in the attack, than will be possible in the Marine Corps. It is believed that the fires of the 4.2″ mortar company can never be called for indiscriminately by company or battalion commanders, but that it will remain the regimental commander's weapon, to be employed judiciously and sparingly where its capabilities

can best be utilized. Although possessing the punch of an artillery battalion, it can never be employed in comparable fashion—motor transport deficiencies forbid it.

Another consideration which will limit the company in its close support of the battalions is the lack of liaison personnel. The only 4.2" mortar company representative with the battalion is the staff sergeant observer who must spot fires over the entire battalion front. Also it would appear that requests for mortar fire would be funneled through him on the company fire direction net to the FDC. The observer cannot, of course, be expected to advise the battalion commander on the employment of the weapon or take any part in the planning of fires. This must be done by the company commander since no liaison officers are available.

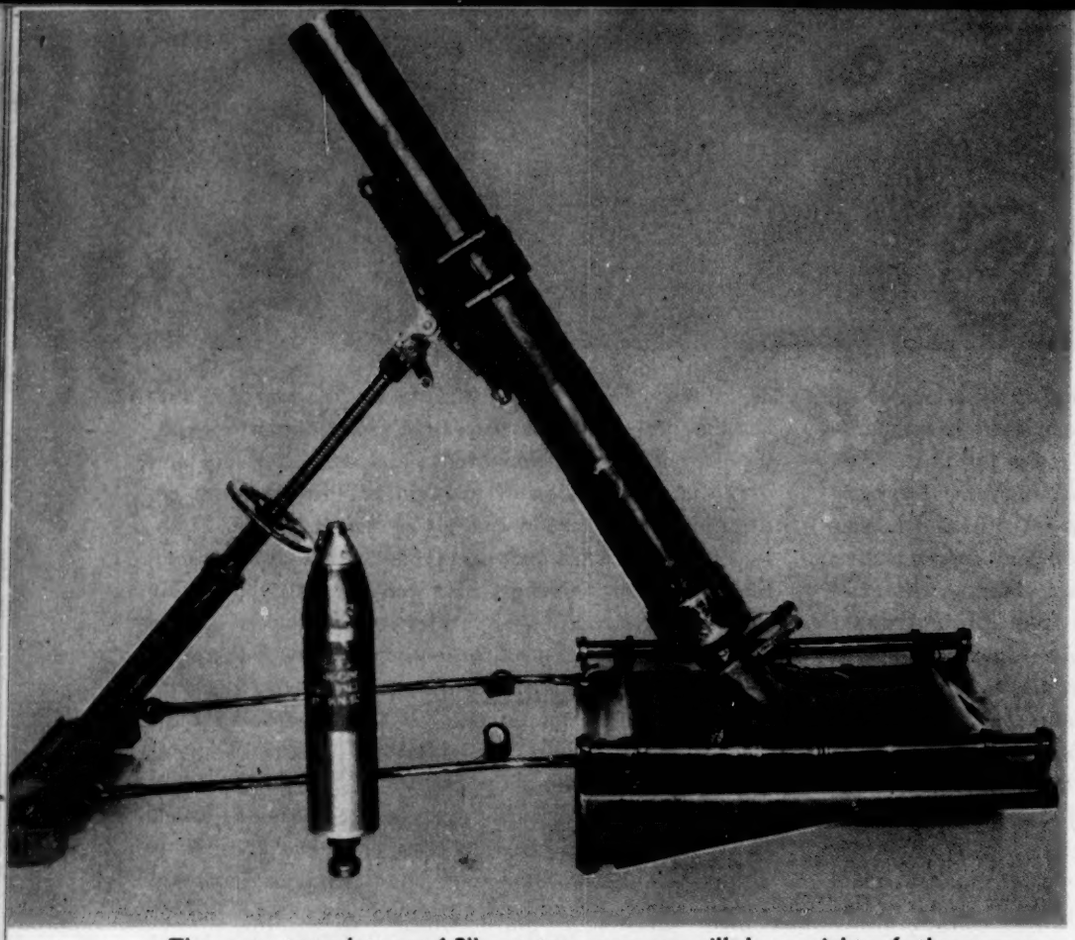
It might be argued that a 4.2" mortar platoon should be placed in direct support of each battalion in the assault echelon with the platoon commander serving in a liaison as well as command capacity. This would be most unwise as it would leave no officer at the gun position. Furthermore, direct support should be avoided as the greatest flexibility of fires is derived with the company in general support of the regiment. Where the regiment is operating on an extended front, direct support or attachment may be mandatory, but in the normal situation general support should be preferred with its obvious advantages of massed fires and centralized control.

How is the company set up on the ground, and where should it be placed in relation to other regimental installations?

THE FIRING POSITIONS for the mortars should have similar characteristics to those for the 81s—defilade, accessibility to good routes for supply, a central location (if not outweighed by other considerations), etc. The platoon positions, for ease of operation, will normally be near each other dispersed laterally and in depth. FM 7-37 states that in the attack "platoon firing positions are usually located 800 to 1200 yards in rear of the line of departure." Inasmuch as the Marine mortar company has but two platoons to cover the regimental front with the present 700 mil limitation of traverse, it would appear that the position of the company would better be determined by a careful analysis of several factors. Firstly, consider the distance from the line of departure to the regimental objective. Can the company place fire on the objective from a position safely in rear of the LD without displacement, or is displacement a necessity in any case? Secondly, will the company be taking part in a preparation on targets just forward of the LD? Can these targets be covered by the massed company fires without entailing the laborious shift of the baseplates? Thirdly, of course, where are the positions which have the desirable characteristics of defilade, etc.? It will be seen that with only two platoons it may frequently be necessary to locate the firing positions much farther to the rear than 1200 yards if massed fires on a broad front just forward of the LD are desired and if displacement before the assault on the regimental objective is necessary in any case. For it must be remembered that at 2000 yards to the rear of the LD a frontage of only 1400 yards can be covered by the massed company fires without moving the baseplate.

IT IS certainly to be hoped that the improved model with the circular baseplate permitting unlimited traverse will be adopted soon, eliminating this bothersome handicap and enabling a more flexible use of the weapon.

Since we have indicated that the employment of the 4.2" mortar will be restricted in the attack, what are the best uses to which it can be put? Where can its capabilities most profitably be utilized? Inasmuch as it is unsurpassed in the performance of screening missions, it seems likely that all firing of this nature will be delegated to the mortar company, except for very small scale smoke missions which could more expeditiously be handled by the battalion mortars. Where a short, violent preparation for the attack is desired, no weapon is better suited to saturate an area with high explosive. (The 4.5"



**The new two-platoon, 4.2" mortar company will have eight of these guns.**

rocket batteries can certainly pour it on, but their fire is highly inaccurate.) The high rate of fire and the high shell capacity make the 4.2" mortar ideal for such a task. During the progress of the attack, it would appear that the fires of the mortar company on targets of opportunity would be limited to such as could not effectively be handled by the other supporting weapons. Point targets in deep defilade would be "naturals" for the 4.2, as it is more accurate than the 81 and has a higher angle of fire than the howitzer. The company would always be a powerful punch that the regimental commander could throw in where needed,—to break up a counterattack, for example.

WE have been speaking thus far of the company and its employment with the restrictions imposed on it by its equipment, or lack of it. We must not forget that where a wide and profitable use of the company can be foreseen, particularly after the amphibious aspect of a campaign has been completed, a considerable amount of motor transport from force troops might well be attached to the division, permitting a steady supply of ammunition and a closer support role for the company. Should this be the case, it would be desirable to have a liaison officer at each battalion so that close support could become an actuality rather than an unattainable capability.

In the defense the major bugaboo of the company comander—ammunition supply—will, of course, generally be less of a headache. If time permits, large stocks of ammunition will be at the gun positions with readily accessible reserves upon which to draw.

The method of support usually will be the same as for the attack—general support of the regiment—for the reasons already stated.

When we consider the location of the firing positions for the company, we find that the increased frontage occupied by a regiment in a defensive attitude acutely emphasizes the limitation of the 700 mil traverse. To cover a regimental front of 5000 yards with the massed fires of the company, without moving the baseplates, the mortar position would have to be over 7000 yards to the rear, a patent absurdity. Since the company can rarely cover the regimental front within a 700 mil arc, each platoon will normally be given a sector of fire, and will move baseplates to mass fires on order. As with the artillery batteries, each platoon will have a barrage (100 yards by 200-400 yards) upon which all guns will be laid when not firing other missions. It might be pointed out that with the increased protection available to the front line infantryman in the defense—a deep foxhole with overhead cover—and in view of the great accuracy of the 4.2" mortar, the Army has found that the barrages can safely be plotted as close as 100 yards to the main line of resistance. (In other circumstances the fires would not be called down closer than 200 yards to friendly troops).

FM 7-37 states that the company firing positions in the defense should be "generally 800 to 3000 yards in rear of the main line of resistance," and that they should "permit accomplishment of all assigned fire missions without displacement, so long as the regiment continues defensive action within the battle position." The only locations which would permit the latter requirement to be met would certainly have to be behind the prepared blocking positions of the reserve battalion. It is surely unusual for a regimental position to be organized so shallowly as to permit the mortars to be as close as 800 yards to the MLR and still be behind the reserve posi-

tions. Particularly in the Marine Corps with its two platoon mortar company, we must be situated farther to the rear to allow a massing of fires over a greater portion of the front. If one must have figures for the depth of the company firing positions, let us say that 1200 to 3200 yards would be a fairer estimate.

What about support for the combat outpost? If the company is located 3000 yards behind the MLR and the combat outpost is 1500 yards forward of the MLR, you have exceeded the range of the weapon, so what is the solution? Army doctrine attaches a platoon or places it in direct support of the outpost, moves it out forward of the MLR to take full advantage of the 4400 yard range, and then brings it scurrying in when the combat outpost withdraws. Inasmuch as we have only two platoons with limited motor transport, it would seem to be hazarding too much for elements of the Marine mortar company to move forward of the MLR. One platoon firing from forward supplementary positions *within the battle position* could always support the combat outpost initially and then return with greater security to primary positions in sufficient time to fire its close defensive and final protective fires. Under most circumstances the company will probably be able to support the combat outpost from its primary positions. As in the attack, the adoption of an improved model with greater range and unlimited traverse will assuredly ease many of the present difficulties.

One problem which the company must always be concerned with, regardless of the type of mortar it is using, is that of displacement. Like most units, the 4.2" mortar company will displace by echelon so that continuous fire support can be furnished. When a platoon is operating independently or is in direct support, it should, however displace at one time as it is not organized nor equipped to fire by sections. With the present motor transport organic to the company, it will be a tight squeeze. As was indicated earlier, by reasonable overloading and packing the gun crews in with some of the ammunition, a platoon can be motorized with 200 to 300 rounds of ammunition, and this is the most sanguine of estimates. A small detachment from the FDC, perhaps the fire direction NCO and a computer, should go forward to prepare a new FDC so that by the time the second platoon completes its displacement, it will be ready to operate for the company. (During displacement of the second platoon the fire direction will be directly from the observers to the gun position). While it is theoretically possible to make this displacement of one platoon, it will be interesing to see how it works out in practice.

It must be realized that with organic transport alone, the company is unable to operate at maximum efficiency. The more transport that can be made available to it, the less limited will be its employment.

To increase its efficiency the mortar company should always maintain the closest possible contact with the supporting artillery battalion. By this means advantage may be taken of the increased facilities for fire control available to the artillery. Also, of course, the closer the liaison, the better the fire coordination between the two. This contact must necessarily be made between the company commander of the mortar company and the regimental artillery liaison officer as no liaison personnel are carried in the mortar company. With a survey from the mortar position to the artillery starting point (or initial point, as it used to be called), or to any of the artillery installations, the mortar company will be tied in to the artillery survey. Then, by registration on the artillery base point for corrections, complete coordination can rapidly be effected. Furthermore, by this means the mortar company will be saved from making an elaborate target area survey, a time-consuming task for the small survey section in the company. It might well become standing operating procedure in artillery units for the regimental artillery liaison officer to furnish a copy of the supporting battalion's firing chart to the company commander or gunnery officer of the 4.2" mortar company. Knowing that the mortar company is registered on their base point and has their target area survey, the artillery can call upon the mortars to reinforce their fires or take over fire missions from them with the certainty that the target will be clearly defined and the mortar fire instant and accurate.

To delve into the employment of the 4.2" mortar company in amphibious operations is too extensive an investigation to be undertaken in this article. It is obvious, however, that the value of the weapon is emphasized in landing operations, for it will give the regimental commander the heavy, close-in fire support he needs during the early, critical stages—before the artillery is ashore and ready to lend a hand. The effect of the tremendous firepower in this company against a strong counterattack at this time might well be the decisive factor.

WE HAVE indicated what comprises this new mortar company, what it can do, and how its function as a close support weapon will be restricted by limitations in equipment and personnel. This is, of course, mere theorizing. The doctrine for the employment of the 4.2" mortar company will be developed by units in the field, by the imaginative efforts of the officers and men in the mortar companies and infantry regiments. However it will be employed, however the existing problems are resolved, at the very least the regimental commander will have an impressive addition to his available firepower, or, more hopefully, the battalions will have the magnificent close support that the 4.2" mortar company can give. USMC

# In Brief

*A new lightweight titanium alloy,* as strong as high-strength steel and only half as heavy, has been developed by the Navy Bureau of Aeronautics for use in new jet planes. The alloy, composed basically of five per cent chromium, three per cent aluminum and the remainder titanium, possesses the advantageous physical properties of several metals now used in aircraft. In addition to its high strength and light weight, it is highly resistant to corrosion and, more important, it retains its basic properties at high temperatures. Other metals now in use, including aluminum and magnesium, do not retain their basic properties at high temperatures. Titanium ores are available in large quantity in both the United States and Canada, making the material basically non-critical and non-strategic.

*The second experimental Martin XB-51* takes to the air during a test flight at the Martin Airport. Powered by three General Electric J-47 engines, the XB-51 is the Air Force's newest postwar bomber. The distinctive swept-back wing, and the T-shape tail configuration of this radically designed plane are clearly visible. The XB-51 is the first jet-powered aircraft specifically designed as a ground support bomber.

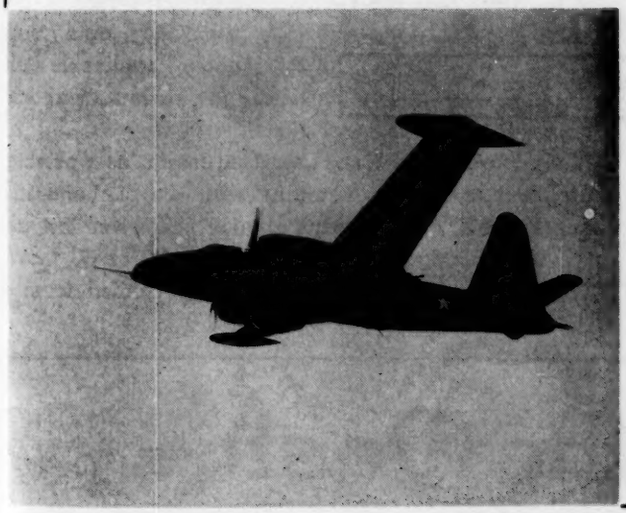
*Marine Corps Reserve Districts boundaries* were changed on 1 April 1950. The 4th District boundaries now include the state of Ohio while the 5th District now includes the state of Kentucky. The present boundaries of the 9th Marine Corps Reserve District have been modified accordingly. All Volunteer Marine Corps personnel living in the states of Ohio and Kentucky were transferred to the 4th and 5th Marine Corps Reserve Districts on 1 April 1950.

*The Navy's new-type motor torpedo boat,* the PT809, is of all-metal construction and will be much larger than those of World War II. The all-metal construction and larger displacement provide greater operating range, more firepower, and increased stability in rough seas.

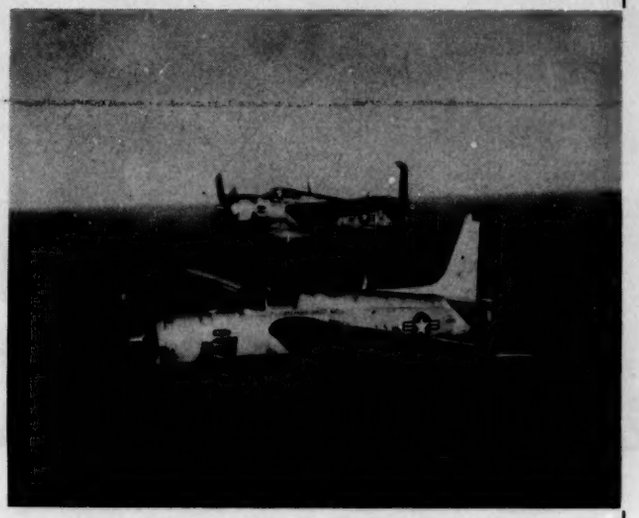
*The Navy will train approximately 6,000 NROTC* college men this summer aboard various ships of the Atlantic and Pacific fleets as well as at the Naval Air Station, Pensacola, Florida; Naval Amphibious Base, Little Creek, Virginia, and the Marine Corps Schools, Quantico, Virginia. The college students, who are midshipmen of the Naval Reserve Officers Training Corps in 52 colleges and universities throughout the country, will receive diversified training—ranging from submarine and aviation indoctrination to general shipboard duty and amphibious landings. The NROTC program is designed to supplement the U. S. Naval Academy in producing career officers for the Navy and Marine Corps, and to provide a continuous supply of young, well trained officers for the Naval and Marine Corps Reserves.

*The Navy's newest flying weapon* is the Convair XP5Y-1 super seaplane, world's first turboprop flying boat. Built by Consolidated Vultee Aircraft Corporation, the XP5Y-1 is designed for long range search-rescue missions and anti-submarine warfare. The 60-ton craft has a top speed of more than 340mph and takes off in less than 30 seconds. It is also the first in a series of new-design, ultra fast seaplanes being developed for the U. S. Navy.

*The Lockheed twin-engined P2V-4*, equipped with the latest electronic and ordnance equipment, is the Navy's newest version of the P2V Neptune. Designed to meet the threat of Snorkel type submarines, the P2V-4 has sensitive search radar that will make possible the detection of smaller targets, such as a Snorkel tube, over a much greater distance. To accurately locate submerged submarines the P2V-4, a long range patrol plane, will utilize magnetic detection gear and sonobuoys.



*The Navy's experimental* research data concerning certain effects of atomic radiation upon living tissue are being made available to civilian physicians and medical officers of the armed services and Federal agencies. To implement the program, pathological slide study sets and appropriate literature prepared by the Naval Medical Research Institute, Bethesda, Maryland, have been provided Naval hospitals throughout the country. This particular group of study slides concerns lesions produced by total body ionizing radiation. The tissue sections were prepared from swine which had been exposed to one million and two million volt x-ray. The response of the tissue of these animals to x-radiation is comparable to the response of tissue in man in atomic bomb radiation.



*A new Navy attack plane* that is believed to be the largest single-engine aircraft in the world, the Grumman AF *Guardian*, will be assigned to duty in the Navy's seven newly-designated VS (air submarine) squadrons. The squadrons have been redesignated to identify their primary mission—the detection and destruction of enemy undersea fighters. At present composed of Douglas *AD Skyraiders*, attack planes, and World War II *Avengers*, torpedo bombers, the seven formerly carried the VC (composite carrier aircraft) squadron designations. The *Guardian*, equipped with the latest electronic detection equipment and carrying rockets as well as other antisubmarine warfare weapons, will be the third type plane assigned to the sub-killer squadrons. Powered by a single Pratt and Whitney reciprocating engine, it is in the medium speed and range class.

**Transport arriving with troops from battle areas to be processed at Reclassification and Redistribution Center. Women Reserves were part of organized group to welcome troops. Few returnees had ever seen a WR.**

**Review of the Personnel Administrative Situation**

PRIOR TO WORLD WAR II THE MARINE CORPS ADMINistrative problems were routine in nature. The size of the Corps was such that considerable administration could be centrally accomplished with a handful of civil service workers and a few service personnel at Headquarters Marine Corps. Administrative routines that had been handed down through the years had proven sound and were readily available in adequately distributed publications. Furthermore, the administration that was accomplished in the field, i.e., outside Headquarters Marine Corps, was being done or being supervised by Marines who from previous experience were so well versed in the subject that they could quote at random applicable articles in various publications.

***By LtCol Leonard M. Mason***

Many a pre-World War II sergeant major, as a private, started out as a clerk wrestling with the pen and ink changes to the Marine Corps Manual and never lost his touch with this and similar manuals for 20 or 30 years.

Came the war! The Marine Corps expanded from a

# Shades of the Past —

**The new personnel system of the Marine Corps represents lessons learned the hard way. Revealed by the war, the many weaknesses of the old system plagued administrators everywhere. This was particularly true at the Reclassification and Redistribution Centers**

strength of 66,440[1] to a peak strength of 485,052[2] active duty personnel. Prior to the outbreak of war the Corps was undergoing many changes in its matériel to keep abreast of latest developments in amphibious warfare. Personnel records were reporting individuals strange to the Marine Corps, e.g., SSN 597 (Self Propelled Weapon Crewman), SSN 794 (Bazooka Operator), SSN 635 (Searchlight Technician) to name a few, and even the mechanic in a motor transport outfit now had to know how to fix more than one type of vehicle. As the war progressed greater specialization developed with the advent of new weapons and techniques. There now appeared SSN 907 (Turret Armorer Tank and Amphibian Tractor), SSN 897 (Dog Handler Combat), SSN 642 (Code Talker) and logistical personnel were concerned with the supply of weasels, bulldozer tanks, and flame throwers. In fact by 1945 the Marine Corps was using 36 rank titles and 24 branch warrants in addition to the existing SSN system. This was a far cry from the days of riding ashore in a motor launch and spraying the beach with a bow-mounted Lewis machine-gun.

The requirements for especially trained men developed so rapidly that personnel procedures were soon antiquated. The old rules didn't apply anymore, but more serious than that was the fact that many administrators did not know the old rules. Our experienced sergeants major had been almost immediately swept into the officer category and soon thereafter the second and third pay grades were screened for officer material. Professionally qualified NCOs who were physically unqualified for officer grades ended up in stateside billets where the sweeping personnel changes within the Marine Corps were less apparent. This left a greatly expanded Fleet Marine Force with an extremely inexperienced corps of administrative workers. True, we had not lost our old sergeants' major abilities but they were now in a planning and supervisory class. The brain behind the typewriter was inexperienced. Coupled with this state of affairs was the unfortunate tendency on the part of some supervisors and commanders to ignore administrative matters under the guise that they were sent out to fight Japs, not to write administrative reports. It is not true to imply that nothing was being done to keep personnel records abreast of the times. As needs developed and changes occurred, new personnel directives were issued to cover the need. However, due to the centralized control over such changes there was an inevitable time lag between the time the need developed in the field, the existence of the need was made known to Headquarters Marine Corps, a solution was evolved, and the solution of Headquarters Marine Corps was transmitted to the field. Furthermore the solution was always in the form of a change in or an addition to the basic personnel system then in use.

### Recognition of the Need for Changes

FREQUENTLY in solving the aforementioned personnel administrative needs, personnel at Headquarters Marine Corps had to overcome their frustration at the inadequacy of the existing basic system. The need for an entirely new system was keenly felt but everyone was too busy with his own war effort to be confronted with sweeping personnel changes. Besides, before a new system could be adopted considerable time and thought must be given to the problem by qualified personnel. Such personnel could not be made available for this duty while the war was still being fought. Actually no one knew exactly what the solution was but everyone knew there was room for vast improvement.

At the close of the war officers were sent to civilian colleges to study personnel administration, special boards were appointed and formal studies were started on overhauling Marine Corps administration. These studies, boards, and specialized education programs have been a

[1]Strength figures from official records Headquarters Marine Corps:

1 Dec 1941—Officers 3,980; Enlisted 62,060; Officer Candidates 400; Total 66,440.

[2]31 Aug 1945—Officers 37,664; Enlisted 443,586; Officer Candidates 3,802; Total 485,052.

*LtCol Mason is a student in the Amphibious Warfare School, Senior Course, MCS, Quantico. As the first CO of the first RandR on the West Coast, he had an opportunity to examine in detail his subject matter for this article.*

# Administratively Speaking

continuing process and the Marine Corps at large is only now becoming acquainted with the results.

To the new system of rank designation, new leave system, new pay system, and new service record book have been added a new promotion system, a new classification system, and a machine records system of personnel accounting all of which is explained in a comprehensive new Marine Corps Manual. We are presently effecting an entirely new personnel accounting system. Confusion will result initially because of the vastness of the change. And now we find the answer to the question "Why write about reclassification and redistribution centers now?": the realization that a job is made easier if the reason for doing the job is known. The conditions that necessitated the organization of the reclassification and redistribution center were the symptoms of an ailment that the new system is designed to cure. The center was recognized at the start as only first aid to this ailment.

### Establishment of the Reclassification and Redistribution Centers

ON 3 JULY 1944 an officer reported to the Commanding General, Marine Corps Base, San Diego, California, with orders from the Commandant Marine Corps designating the reporting officer as Commanding Officer, West Coast Reclassification and Redistribution Center.[3] The Commanding General had previously been advised that such was to happen but except for the newly arrived officer and a few people in Headquarters Marine Corps no one else knew what this imposing title implied.

Barracks space, office space, equipment, supplies, and personnel were all required but no one in San Diego knew how much of what was needed. Headquarters Marine Corps advised that the first troops to be processed (2,800 officers and men of the First Marine Division) would arrive in San Diego by ship on 7 July. This left four days, including a national holiday, from arrival of commanding officer to reception of first troops. In that time a competent staff had to be assembled, office and barracks space arranged for, equipment and supplies decided upon and procured. In addition to these material things, principles, and procedures for rapid processing had to be evolved. This was a new venture for the Marine Corps and there was no precedent to follow. The trials and tribulations of these four days would make a story in itself. The high points of this organization will be touched on later. At the moment suffice it to say, Marine Corps Base personnel were most cooperative and Headquarters Marine Corps directly backed the organization right from the start. (In fact RandR was set up under the operational control of Headquarters Marine Corps and was under the Marine Corps Base for administrative purposes). Space was obtained, equipment and supplies procured, a staff assigned and assembled, and procedures roughed up for processing troops—all with the point in view of correcting previous faults.

### Faults to Be Corrected By RandR

LET US refresh our minds on what these "faults" were. Although the Commandant's policy was that 24 months overseas constituted a tour of duty, many people were pushing 30 months or more before they headed stateside. This was especially true if you were skilled and relief was difficult to obtain. Faulty administration coupled with multi-transfers would often add weeks or months to a man's tour.

After a man finally started for home from a forward area he would often end up in a transient center for weeks on end doing police work and other chores supposedly while awaiting a ship. However, it was not uncommon for individuals awaiting return to the United States to see ships come and go without them. Occasionally design, but more often loose or faulty administration, kept people an unnecessarily long time in transient camps. It was not unheard of for an individual to be administratively lost, i.e., no record of the man in the office so his name never appeared on a sailing roster. However, eventually the day came and the man embarked aboard ship with a few dirty clothes in a musty sea bag—only to arrive in the United States and end up in another transient camp or casual battalion with no leave, no pay, no clothes and little attention.

After varying amounts of delay personnel were paid and given leave to return to the same station upon completion thereof. Upon return they would get their new duty station assignment which not only was invariably a considerable distance fro mthe man's home but very often was an east coast station—more days lost in travel. Men were taking leave from San Francisco and Camp Pendleton and traveling all over the United States, even to the East Coast, and back, at their own expense. True enough, the government could not be expected to pay for travel while men are on a vacation. No one expected that or complained bitterly about it. However, traveling certainly made a dent in the bank roll as well as used up precious days of leave. It would be nice if all this traveling wasn't necessary.

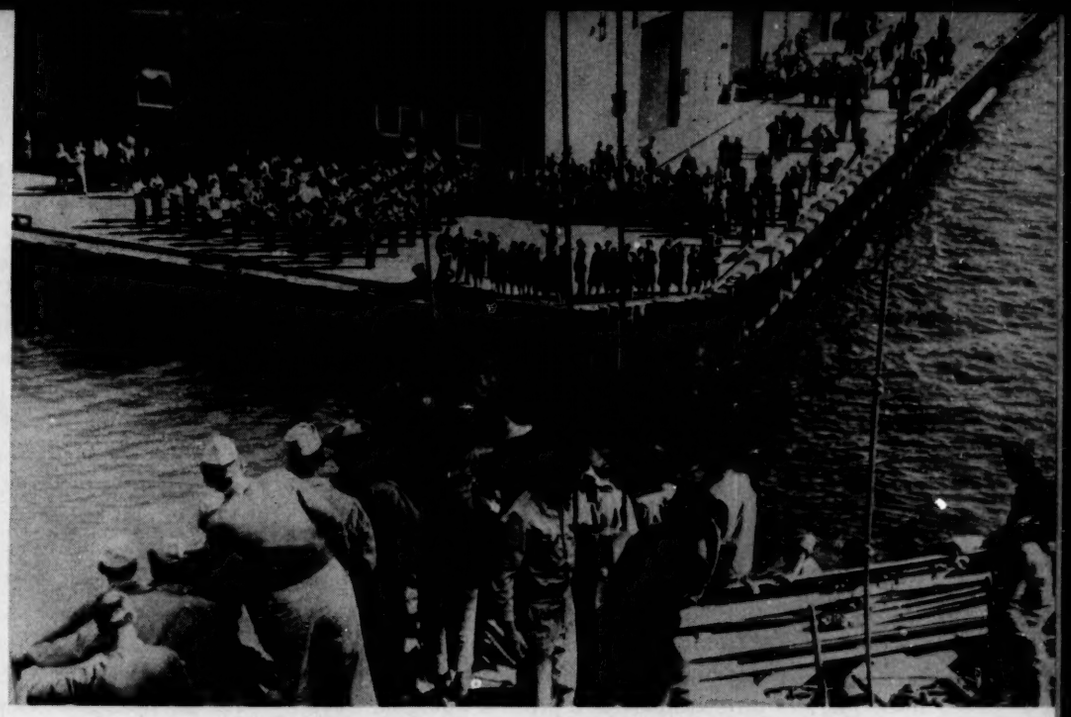
These are the high lights of the "faults" from the individual's viewpoint. Quite naturally after a full two years of island hopping, field life with considerable Jap hunting and bullet dodging thrown in, the returning Marine felt he was entitled to better treatment.

Now let us examine some of the "faults" from the Marine Corps' viewpoint.

1. At a time when manpower was at a premium the Marine Corps was losing a staggering number of man-days from lost motion in transient camps and casual battalions. In addition to the man-day loss caused by delay

[3]Hereinafter referred to as "RandR."

in movement, referred to as an "individual fault," many Marines were ending up in comparatively unimportant jobs in and around the stateside casual battalions that received them. Another clerk here, another driver there, a cleaning detail, and a couple of athletes all in one outfit—and then Joe's outfit needed a few men to ease his personnel problems. It is amazing how troops can be filtered away when run through a casual processing unit. Malice aforethought not intended, it is just that local administrators are limited in their viewpoint. They have hundreds of men passing through their hands and they see no reason why unofficial requests for personnel should not be filled. Usually their conscience is scott free because the requests have been fully explained and to them, from their limited viewpoint, seem entirely justified. It is no strain at all to be fully sympathetic and concur in the individual's need for personnel. But then, practically anyone can justify a need for additional personnel. However, friendships and empire building must not becloud the overall picture. The personnel diverted into unnecessary additional billets about the receiving station should go to other posts as reliefs for personnel due to go overseas.



**Secrecy of ship movements and waterfront restrictions tended to make returnee's homecoming disappointing. RandR Center bands, WRs provided "human touch."**

In short, there was no tight control on returning personnel. But there was great need for control to be established in mid-1944. Authorized strength was about to be reached and this meant a considerable reduction in enlistments and a corresponding reduction in the number of men going to recruit camps. Closer control over personnel returning from overseas was necessary if replacement drafts, which were dependent on some of these personnel, were to be regularly organized.

2. Many personnel returning from overseas were still bearing the same SSN they had when they left the United States. In a few cases this was all right but too often men still had their basic SSN 521, assigned at "boot camp." More serious were cases of men who went overseas with a low skilled SSN and after two years experience were fully qualified and were filling a high skilled billet but their SSN had not been changed prior to detachment.

3. Headquarters Marine Corps was experiencing difficulty in controlling the distribution of specialists and maintaining current records of specialists. This was brought about largely as a result of the great time lag between the time personnel reports were prepared in the field and the time they were received at Washington, and the aforementioned inconsistencies in the reports when received. This made planning for replacement training of specialists difficult. For example, at one time during the war Marine Corps Headquarters received personnel requisitions from the Pacific indicating an extreme shortage of motor transport personnel. This was a surprise to the personnel planners because a healthy flow of graduates had been maintained in the motor transport schools. It was known that the ability was in the Marine Corps but misassignment, improper classification and reclassification had so dispersed these especially trained men that considerable time as well as some special reports were required to locate and redistribute personnel.

4. Another difficult personnel problem at this time was maintaining the proficiency of certain skilled specialists while they were serving their state side tours. Skilled technicians were returning from overseas and ending up walking posts in some navy yard for a year with no opportunity of maintaining proficiency in their various skills. When ordered overseas again a retraining period was required to gain back what had been lost. This was another source of lost man days.

5. Men were arriving at posts all over the United States with incomplete staff returns or no staff returns at all. Their identification cards had long since disappeared. Many had only the clothing on their back and no one rubber name stamps to mark their clothing for the Saturday morning inspections they were about to start standing. More seriously a large percentage were reporting in absent over leave by several days largely from lack of instruction on how to figure out the date of reporting

on a furlough transfer and the indefiniteness of written orders. All this placed a huge burden on stateside posts whose T/Os had been trimmed to the bone of administrative personnel to provide more personnel overseas.

6. Personnel returning from overseas and not physically fit for duty created another personnel problem. Men returning from a tour in the forward area were concealing physical deficiencies in order not to delay their leave and their getting home. This resulted in Marines being stricken with malaria, dengue, or filariasis while en route home, or while on furlough, or reporting in to a new duty station and immediately going on the sick list. Many of those stricken while traveling turned in to the nearest hospital whether or not it was federally maintained. This resulted in considerable correspondence at Headquarters Marine Corps from civilian hospitals and doctors all over the country concerning who was to pay the bills.

The physically unfit who were carried off the ships and those who did turn themselves in prior to going on leave were hospitalized in West Coast hospitals. When finally discharged for duty they were invariably assigned to a nearby station thereby further contributing to the pyramiding of personnel near ports of entry.

Late in the war a portion of patients were discharged from hospitals in a "limited duty status." This was an effort on the part of the policy makers to reduce the number of Marines on hospital rolls and to rotate men from posts and stations with them whenever possible. The health record of a person in this category clearly stated what type of duty the man could perform without endangering his health. This was a sound policy but the existing personnel situation at the time would not permit its successful execution. Men in "limited duty status" were transferred and assigned duty often without consideration of their limited status as stated in their health record. So men who had been lost to the Marine Corps for two or three months while recuperating from filariasis were returning to hospitalization for additional treatment because of assignment to too strenuous or improper type duty. This was more lost days in hospitalization and travel time.

These were the faults the RandR staff was briefed on and set forth to overcome. Now let us have a look at the organization that was evolved to accomplish this.

### Physical Organization and Processing Routines of RandR

THE MAIN feature of the organization of RandR was the splitting of the processing functions into two concurrently functioning phases. Each man that arrived at RandR immediately became a dual person in the eyes of the RandR command. There was the "physical body" that had to be physically examined, cleaned, clothed, and outfitted for leave and new duty, and there was the "paper body." This "paper body" was represented by a 5" x 7" card which was prepared for each man upon arrival. This card recorded each man's progress in the processing system. His physical processing progress was recorded as well as the administrative processing. The administrative processing consisted of:

1. Report of arrival in United States to Headquarters Marine Corps.
2. Classification interview and testing when required.
3. Bringing personal records up to date, i.e., Service Record Book, Health Record, Pay Record, and Clothing Record.
4. Determination of leave address for leave papers, duty assignment considerations, and assignment to troop trains.
5. Assignment to a departure detail.
6. New duty assignment.
7. Execution of change of address cards.
8. Issuance of a furlough transfer order to cover each man.

The physical processing involved:

1. Physical examination by Navy doctors.
2. Fumigation of personnel effects returned from forward areas.
3. Outfitting with new clothes.
4. Procurement of ration cards for use on furlough.
5. Procurement of rubber name stamps.
6. Procurement of identification card with recent photograph.
7. Payment of each man.
8. Barbering service.
9. Steam pressing service.
10. Long distance telephone and telegraph service.
11. Procurement of civilian luggage.
12. Loading of baggage and men on trains.

Streamlined organization was the secret of RandR success. To accomplish the detailed processing listed above with any degree of efficiency requires either a long processing period or a detailed organization with close supervision. A long processing period aggravated one "fault" the RandR was trying to correct so the only solution was

### Organization

LARGE GROUPS were split into smaller details and placed on a strict time schedule with each detail dovetailing into the processing routines at all times. A man could not even get his haircut on his own time. In the first place he had very little free time to himself. He was scheduled to be somewhere doing something from reveille to dark. In the second place thousands upon thousands of man hours would be wasted if several hundred men tried on their own to get a seat in a barber chair or to get their uniforms pressed. Many of the steps listed above under physical processing appear insignificant in themselves. However, their importance becomes directly proportional to the volume of personnel when time is the major consideration.

Control is essential if time is not to be wasted. Casual personnel are not suitable for controlling these smaller details. They are unacquainted with the system and the physical organization and therefore allow details to get lost. A lost detail is thrown off schedule and interrupts the interwoven scheduled processing of other details. A small cadre of permanent enlisted personnel are required as troop handlers i.e., guides for the small details being processed and NCOs in charge of each detail.

CG of base and CO of RandR turn out to help welcome troops. Before RandR was established, skilled technicians often returned to walk a navy yard post.

After that brief outline of the organization let us examine a few of the functions performed at RandR in a little more detail and at the same time note the correction of earlier mentioned "faults." To cut down overseas tours and get reliefs overseas so that a normal tour of 24 months was not a rarity it was necessary to get more troops overseas sooner. A reduction of man-days lost by troops returning from overseas would help in this matter by advancing the date the returnee would report at a stateside post as relief for a Marine due for overseas duty. Supervised detailed organization reduced processing delays. This was in keeping with the Commandant's organizational directive which said, "Personnel will not remain more than six days in the RandR Center."[4] Actually the average ran about four-and-a-half days. Time spent in United States travel was reduced. Headquarters Marine Corps advised RandR of vacancies in various posts on the East coast and whenever possible men were assigned to the station of their choice. This involved considerable office work by the RandR staff. Men went on leave first and so desired transportation to their home and not to their new duty station. As an aid to the individual a system was evolved whereby troop trains would be run to various points in the United States, and orders would be delivered to the men at these points. This troop train movement on a "transportation request" basis left the man his own money to spend on his leave. By delivering his orders at the troop train destination travel was performed in a duty status and the man's leave was not used up in travel. However, a close check had to be maintained at RandR on the leave destination and ultimate duty station of each individual. The law was very explicit in the point that a man could not travel at government expense a distance greater than the shortest usually traveled route from port of debarkation to new duty station. Maps and mileage tables were consulted on each individual before his assignment to a troop train could be accomplished. In fact an atlas was often brought into play to locate Rogers Cross Roads, Ga.; Crab Apple Springs, West Va., etc.

The physical procurement of the trains presented difficulties not present today. As you recall train equipment was at a premium throughout the war, especially sleeping cars. And sleeping cars were an unwritten rule for those long trips across continent. The train requirements had to be accurately anticipated well in advance and the railroads notified so that equipment would be available when needed. Of what value is processing 600 men in four days if after receipt of orders the men must wait eight to 10 days to get on a train? Those were the conditions in the days of ODT.

### How "Faults" Were Corrected

IT CAN be noted that both phases of the processing consisted of things the individual himself desired or things that the Marine Corps desired for him and that all were aimed at the correction of aforementioned "faults" or unsatisfactory conditions then existing. In the above discussion of RandR routines you noted how the "faults" from the individual's viewpoint were overcome. Let us now examine the solution of the "faults" from the Marine Corps point of view.

1. It has been shown how days lost by unnecessary delay were reduced. To overcome diversion of personnel at reception or casual centers the RandR was set up directly under Headquarters Marine Corps. All directives

[4]CMC ltr MC-269053 of 22 June 1944.

concerning disposition of troops originated from Headquarters Marine Corps. All arrivals at RandR were reported by teletype direct to Headquarters Marine Corps (By name in case of officers, by number and SSN in case of enlisted). A weekly teletype report to the Commandant indicated the number transferred and the number remaining. Any diversion of troops was quickly apparent by checking disposition directives against input and output at RandR. The six day processing deadline and the tight control over input and output removed the possibility of transients performing any guard or police duties on even a temporary basis. All of their time was accounted for in the processing schedule.

2. To remedy the classification "faults" then existing, the processing schedule provided for a 30 minute interview with a qualified classification man for each person returning from overseas. A private booth was provided for each of these interviews. Here the keynote was informality and privacy. The man was encouraged to talk about his military background and experiences. The interviewer made notes and asked questions as necessary. After the interview a primary SSN was determined upon and any additional SSNs recorded. If a change was indicated in the SSN with which the man joined RandR steps were taken to execute this change and his new assignment was based on what his ultimate primary SSN would be. For best results interviewers must set themselves at the level of the man being interviewed. It was noticed that the person interviewed was more relaxed, casual, and inclined to give a more complete picture of his current qualifications if the interviewer was an enlisted man rather than an officer. The interviewers were mostly trained PFCs and corporals with a few higher grade enlisted men for supervision and interview of senior enlisted.

3. The administrative processing accomplished at RandR overcame considerable of the difficulties in controlling specialists. This careful attention to administrative details plus liberal use of the teletype resulted in Headquarters Marine Corps being much closer on the answer of what specialists there were in the Marine Corps and where they were located.

4. The assignment of a man returning from overseas was governed by the location of the man's home and his SSN. Men with technical SSNs were by and large funneled into a training command nearest their home where they could impart their knowledge to others and at the same time maintain their own proficiency. Other SSNs were distributed as far as possible to the station of their choice with a report of such transfer made to Headquarters Marine Corps.

In addition to the above described grouping of technical SSNs, one east coast Navy Yard Marine Barracks was designated as a post for communication personnel. The commanding officer and quartermaster of this barracks were not communication officers but the executive officer, all other officers and practically all enlisted held communication SSNs. The success of this program was difficult to measure and depends on who you talk with about the venture. I am not taking sides but it was apparent that the security of said Navy Yard was maintained and that many radio operators and other communication technicians through local schooling retained a proficiency they could not have retained had they been assigned piecemeal.

5. The complaints of the commanding officers of stations joining men recently returned from overseas were overcome in the administrative and physical processing at RandR. To reduce the AOL problem the officer in charge of each troop train was individually instructed by the RandR adjutant on determination of "date of reporting." Upon arrival at troop train destination the OIC presented each Marine with countersigned orders and each set of orders told each individual the exact day he was due to report at his particular station of duty. The OIC was required to set this date in order to give the maximum days leave to each man. An "effective date" determined in San Diego would cause the Marine to travel on his own time if the train was delayed, which was not unusual. Careful selection and instruction of the OIC of troop trains was essential.

6. The problem of physical unfits was solved by physical examination upon arrival at RandR and issue of atabrine tablets to malarial risks prior to departure. Care-

**Troop train detail assembled for departure. Signs in foreground were for groups detraining at same city.**

Finished product of RandR. These Marines, re-uniformed, clean, proud, and happy, are an asset to the Corps.

ful assignment procedures overcame the "limited duty" problem, except for the ever present "gold bricking" minority.

## Conclusions

IN REFLECTION of the faults corrected by RandR the following points become apparent:

1. In handling large groups of men returning from overseas consideration must be given to the individual and to the Marine Corps at large. It must not be viewed strictly as a physical problem of only local concern.

2. The keynote of a personnel system is correct classification. In personnel accounting an individual is represented by a symbol. If the symbol doesn't correctly identify the man the end result is false. Classification is a continuing process. It is not enough to review a man's classification upon joining and transfer. His record must be checked periodically to make certain that the man is being employed to maximum efficiency and that any additional acquired skills are duly recorded. Classification begins with the man's immediate commanding officer. The commanding officer should not only assure that the man has the correct Military Occupational Specialty (MOS)[5] number but should instill in the individual the importance of his records showing his current skills and abilities.

3. Muster Rolls, Form 49 and Change Sheets are an accurate method of accounting for personnel. However, these reports constitute a considerable work load for administrative personnel and the burden of assembling any specific data from these reports once they are received is tremendously laborious and ever subject to human error. Machine records are doing away with the last mentioned personnel records and at the same time overcoming the voiced objections to these records.

4. In spite of the faults in the old system we did win the war. From the personnel standpoint our struggle was aided by a large flow of manpower which contained partially trained skilled personnel and personnel with sufficient mechanical aptitude to be rapid on-the-job learners. The end of the war brought demobilization and a lowering of the quality of manpower available to the Marine Corps as civilian employment proved tempting to a large percentage of the personnel with high GCT[6] scores. As our skilled personnel became demobilized personnel requisitions increased for skilled and technical SSNs. When these requests were not filled there was some fault found with the system itself. People were heard to say that the whole system should be discarded. By now I hope the reader disagrees with this approach. The system is vital to the Marine Corps. However, when the source of supply is curtailed, adjustments must be made in the personnel field but not necessarily with the system. The system must not only remain intact but must be perfected to where it will function with the desired results when mobilization is again directed.

5. Another reason a detailed classification system must be maintained is to assist the career guidance program. In view of the reduced strength of the Marine Corps in peace time and the necessity of preparation for rapid expansion on M-day the "dead-wood" in Marine Corps personnel must be held at an absolute minimum. This implies more than simply fitting the square peg in the round hole. Once a man's qualifications to perform a certain job in the Marine Corps is determined and he is assigned to this job, the task has just begun. If the man is to enjoy a progressive career in the Marine Corps his development must be watched and guided. The Marine Corps has since the war established at Headquarters Marine Corps an agency to monitor the careers of all categories of Marines, i.e., artillery, supply, amphtrac, infantry, etc.

WITH the tempting offers civilian life can offer to the young men of the day it is even more important that the Marine Corps do all within its power to attract personnel. Insuring a progressive career to each and all should prove effective.

USMC

[5]A term replacing SSN as a means of identifying skills.

[6]General Classification Test.

# Passing in Review

## BOOKS OF INTEREST TO MARINE READERS

**Of Ships and Subs . . .**

JANE'S FIGHTING SHIPS 1949-50—Edited by F. E. McMurtrie and R. V. B. Blackman. New York: McGraw-Hill. $16.50

MERCHANT SHIPS 1949-50—Edited by E. C. Talbot-Booth. New York: McGraw-Hill. $8.50

UNITED STATES SUBMARINE OPERATIONS IN WORLD WAR II—Theodore Roscoe. Annapolis: U. S. Naval Institute. $10.00

To those who are familiar with former issues, *Jane's Fighting Ships 1949-50* will be welcomed with the customary interest accorded the series. To those who are not acquainted with the series, this latest volume is highly recommended for getting-acquainted purposes. As the only complete and authentic encyclopedia of all navies of the world, *Jane's Fighting Ships* has no peer. In it every class of fighting ship is covered in minute detail. Handsomely illustrated and beautifully bound, this book will be sought after by every student of modern naval affairs. One of the most interesting sections of the book is that concerning Russia. There has been a great deal of talk recently with respect to the Soviet navy. Here in one book are pictures and details on every ship the Russians are known to have, from battleships to submarines. Of particular interest are those passages dealing with new construction in which we are told, among other things, that the Russians have three new battleships of the 45,000 ton class, each mounting nine 16-inch guns in three turrets, two forward and one aft. *Jane's* has always been comprehensive. This issue brings it up to date.

Complementary to *Jane's Fighting Ships*, but in a specialized field of its own, is *Merchant Ships 1949-50*, a complete reference on the world's merchant shipping. The last edition of this book was published in 1944 and the new book fills a noticeable void. There are many sections in the book dealing with such things as recognition silhouettes, photographs, company flags and funnels, ship types, ships building and completed in 1948, war loss, and finally a general index of live ships. The book is attractively bound, printed on high quality paper, and well edited.

*United States Submarine Operations in World War II* was prepared by Theodore Roscoe for the Bureau of Naval Personnel from official records, patrol reports, and material assembled by historians for the submarine force. The book's preface states that the volume's primary mission is to serve as an informative, instructive, and inspirational text for those in the Naval Service who are interested directly, or indirectly, in submarines. Although the book may have been primarily intended for the Naval Service, its story should be of interest to everyone who wants to know how we won the war against Japan and exactly what part each arm and service played. In this book he will find a complete and engrossing account of the submariners' part, an epic story of the war of attrition fought below the surface which contributed so decisively to Japan's defeat.

Nobody should mistake this book for a text and pass it by on that ground for if he does, he will miss 493 pages of fascinating reading. The author's easy, running, narrative style, well-backed with facts, figures, and human interest stories, results in a book that resembles a text in about the same way that a submarine resembles a diving helmet. The amazing thing is, however, that the book serves the same purpose as a textbook in that it is highly informative and instructive. But above that, and most important, it is entertaining.

Review space does not allow a complete description of this book. As a sample of what it contains—a very small but fairly indicative sample—the following is quoted:

"In the Officers' Club of the Submarine Base, Pearl Harbor, there is on display an unexploded 5-inch shell. Those best acquainted with this eccentric projectile tip their hats each time they pass it. The hat-tippers are those submariners who were aboard *Nautilus* on the night of November 20, 1943. They doff as one would to an acquaintance—but not exactly a friend."

The 78 Marines who were on *Nautilus* that night, hours before the 2nd Marine Division began its landing on Tarawa, would probably doff their hats too. On their way to Apamma aboard the sub for a surprise landing, they almost lost their lives, along with the submariners, when the USS *Ringgold* opened fire in the mistaken belief that its target was a Japanese sub.

The foregoing is illustrative only of a small part of what the book contains. It is to the credit of the author and those in positions of responsibility who had to approve the book that mistakes, trials, and tribulations have not been deleted but take their place side by side with the

brilliant successes recorded.

Well illustrated with photographs, drawings, and maps, *United States Submarine Operations in World War II* is recommended without reservation for those who want to know about what has been a little-known (mainly for security reasons) but highly important force in our country's Naval Service. JRS

**Book for Marines . . .**

FAMOUS AMERICAN MARINES—Charles Lee Lewis, 375 pages, illustrated. Boston: L. C. Page & Company. $3.75

Fame and glory have been the lore of United States Marines since their inception in 1775, and their history has run a parallel course with that of the United States itself. Steeped with incomparable tradition among the ranks of the world's *elite militaire*, the Marine Corps has been the watch-guard for an embryo republic and a united democracy. However, even the most superb military group cannot succeed in its mission without skilled direction, and it is the co-reflection of leaders and Corps, Corps and leaders, which has made the Marine Corps the highly respected fighting unit that it is and has been.

Charles Lee Lewis' *Famous American Marines* does much to add to the brilliant history of the Marine Corps, although in itself it is a selection of 18 excellent biographies which help chronicle 175 years of military achievement. There are few books which have accomplished that end in so few words. For example, the chapter devoted to Gen L. W. T. Waller carries the reader through Marine operations in Egypt, the blowing up of the *Maine*, the Battles of Manila Bay and Santiago, action in Puerto Rico, the fall of Manila, the Boxer Rebellion, "Bloody Samar" in the Philippines, duty on the Isthmus of Panama, the Cuban Revolution in 1906, Vera Cruz in 1914, the Haitian Intervention, to the death (in 1926) of a colorful Marine officer. This typifies other chapters in which the history of the Corps is woven in the background.

Included in this excellent biographical collection are Samuel Nicholas, Daniel Carmick, Presley N. O'Bannon, John Marshal Gamble, Archibald Henderson, Archibald Gillespie, Charles G. McCawley, Jacob Zeilin, Charles Heywood, L. W. T. Waller, John Twiggs Myers, Joseph H. Pendleton, Smedley D. Butler, Wendell C. Neville, John A. Lejeune, Alexander A. Vandegrift, Holland Smith, and Roy S. Geiger.

Mr Lewis aptly describes his problem of selecting individuals for this biographical collection in the introduction.

"Famous Marine officers have been selected from various periods since the founding of the Corps in order to give a more or less complete history of this remarkable body of fighting men. So many heroic characters have

## ✓ Check List

**About Marines**

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| A RIBBON AND A STAR | Monks & Falter | $2.75 |
| BATTLE FOR TARAWA | Monograph Hq USMC | 1.50 |
| BETIO BEACHHEAD | Marine Combat Corres. | 2.50 |
| BOOT | Cpl Gilbert Bailey | 2.50 |
| BOUGAINVILLE AND THE NORTHERN SOLOMONS | Monograph Hq USMC | 2.00 |
| CORAL AND BRASS | Gen H. M. Smith | 3.00 |
| CORAL COMES HIGH | Capt George P. Hunt | 2.00 |
| DEFENSE OF WAKE | Monograph Hq USMC | 1.25 |
| DEVIL BIRDS | Capt John A. DeChant | 4.00 |
| FIX BAYONETS | Col John W. Thomason, Jr | 3.00 |
| FOLLOW ME—2d Marine Division | Unit History | 6.00 |
| THE FOURTH MARINE DIVISION | Unit History | 5.00 |
| GUADALCANAL DIARY | Richard Tregaskis | .25 |
| HISTORY OF THE U. S. MARINE CORPS | Col Clyde H. Metcalf | 5.50 |
| HIT THE BEACH | Maj William C. McCahill | 4.95 |
| THE ISLAND (Guadalcanal) | Capt Herbert Merillat | 3.00 |
| THE ISLAND WAR | Maj Frank O. Hough | 5.00 |
| THE LONG, THE SHORT, AND THE TALL | Sgt Alvin M. Josephy | 3.00 |
| THE MARINE CORPS READER | Col Clyde H. Metcalfe | 3.00 |
| MARINES AT MIDWAY | Monograph Hq USMC | .50 |
| MARINES AND OTHERS | Col John W. Thomason, Jr | 3.00 |
| THE MARINES' WAR | Fletcher Pratt | 5.00 |
| THE NINTH MARINES | Unit History | 5.00 |
| ON TO WESTWARD | Robert Sherrod | 3.00 |
| SEMPER FIDELIS, an Anthology | Marine Combat Corres. | 3.50 |
| SIXTH MARINE DIVISION | Unit History | 5.00 |
| THE STORY OF WAKE ISLAND | Col James P. S. Devereux | 2.75 |
| THE THIRD MARINE DIVISION | Unit History | 5.00 |
| UNCOMMON VALOR | Six Combat Corres. | 3.00 |
| U. S. MARINES ON IWO JIMA | Capt Raymond Henri, USMC | 3.50 |
| YOUR MARINE CORPS IN WORLD WAR II (Pictorial) | | 3.00 |

**This list is revised monthly to include the latest in military and popular books. Are there some new titles that should be added to your library? Remember, there is a ten per cent discount for Association members.**

## World War II

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